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N.S.W. Fruitgrowers Federation

IMPORTANT ANNUAL CONFERENCE AT SYDNEY

Mutual Fruit Trade with New Zealand Approved

THERE were animated discussions on many subjects at the annual convention of the Fruitgrowers' Federation of N.S.W., which was held at Sydney from June 27 to 29, General J. Heane presiding.

There were in attendance 70 delegates from eight districts, representing all parts of the State. Close attention was given to the discussions during the three days of the conference. The standard of debate was a high one. At times it was evident that delegates held views as wide apart as the poles, particularly as regards marketing and control, yet any temporary heat was quickly dispelled, and good feeling prevailed. The chairman stressed the necessity for delegates to view matters from a State-wide industry viewpoint, and not to introduce a local or parochial spirit. In fact, a still wider view was taken, great applause greeting the speaker, who pointed out that the industry must be recognised on an all-Australian basis.

Removal of Fireblight Embargo.

Regarding Fireblight, Dr. Noble, Government Biologist, made an important contribution to the conference discussions. At the conclusion of his address, Dr. Noble was questioned on many aspects, and retained his position unshakeably that the risk of the introduction of Fireblight on Apples was practically impossible. There was not one chance in ten million, he said: to eliminate all the risk of the introduction of Fireblight all international trade and movement would have to cease. Careful tests had shown that fireblight could be conveyed on the growing part of plants, but not on Apples or Apple spurs. With Apples, it was a blossom trouble affecting that season's crop: with Pears the fruit was affected; Fireblight was far worse on Pears than on Apples. It was the studied opinion of scientists that there was no commercial risk of the introduction of Fireblight on Apples, and that growers need have no fear if Apples from New Zealand came here.

Delegates from the Apple and Pear districts questioned Dr. Noble very closely. Some delegates took the view that if there were any risk at all the embargo should remain.

A motion was moved that every effort be made to secure the lifting of the New Zealand embargo on fruit from Australia. Mr. Herring (Batlow) introduced an amendment, adding the words, "without involving the introduction of N.Z. Apples into Australia on account of the danger of Fireblight." Conference, however, rejected the amendment, and chose the original motion.

Mr. Willis J. Williams gave details of the new markets: the construction would be expedited, the final legal points having now been settled.

Organised Marketing.

On the subject of legislative control, divergent views were expressed. Growers from the Murrumbidgee Irrigation Areas said they had had their lessons regarding legislative control and were through with it. Their resolution opposing control by legislative action was altered to read, "that any control in the marketing of fruit shall be retained by the producer, free from any Government interference."

The board was empowered to draft proposals for the reorganising of the Federation.

Election of Board.

The election of the board members resulted:—

Mr. J. Heane (president).

Central Coast: A. S. Brown (Ourimbah), A. E. Lillicrapp (Mangrove Mountain).

Central Tablelands: E. Ray (Bathurst), A. U. Tonkins (Orange).

Cumberland: J. M. Hind (Liverpool), C. A. Holswich (Dural).

Hawkesbury: F. B. Mackenzie (Kurrajong), R. T. Wood (Pitt Town).

Irrigation Areas: J. Hetherington (Leeton), J. E. Ward (Griffith).

Northern: H. L. Anthony (Murwillumbah), A. J. Taylor (Singleton).

Southern: A. E. Herring (Batlow), T. A. Tester (Young).

Appreciation was expressed to General Heane, who has been president for twelve years. This year there was an election, Mr. C. A. Holsmith (Dural) being the other nominee. Conference, however, re-elected General Heane. The members of the board were all cordially thanked, also the efficient and popular secretary, Col. E. E. Herrod.

NEWS IN BRIEF.

In answer to a question asked by the Murrumbidgee Irrigation Citrus growers, the Minister for Commerce (Mr. Stewart) stated there was no intention of enforcing the compulsory marketing of Citrus fruits. The Minister stated that no legislation would be enacted without first taking a poll.

It is anticipated that legislation will shortly go through Parliament, without opposition, enabling the First Mildura Irrigation Trust to administer the proposed drainage scheme for Mildura and Irymple.

M.I.A. growers are seeking the enforcement of regulations which will eliminate low-grade from the Sydney markets.

Plans are being talked over in Victoria regarding the forming of an Association of growers and merchants to improve the marketing of fruit in Melbourne—on the same lines as the V.F.M.A. handles export matters.

There is only an average sized crop of Apples at Wenatchee (Washington), U.S.A., one of the principal boxed Apple sections of the United States.

Alterations to the constitution of the Federal Citrus Council with regard to representatives for New South Wales are sought by Citrus growers in that State.

Summer oil may be combined with Bordeaux for combating fungus diseases and insect pests of citrus, states Dr. G. H. Cunningham, Mycologist of N.Z.

All "mummy" or shrivelled fruits on the trees or on the ground should be removed now, as they are the chief sources of infection for brown rot in the following season.

By the judicious combining of orchard sprays, the number of applications can be halved.

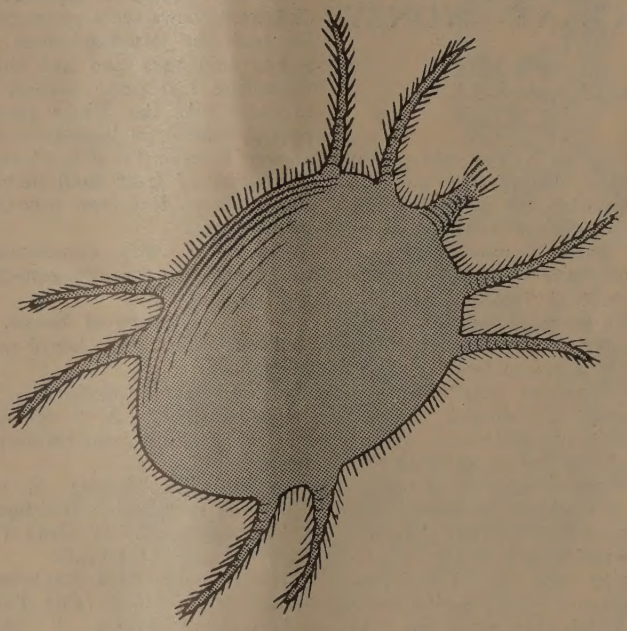
Colloidal sulphur is used in New Zealand successfully in the control of brown rot of stone fruits.

The Dominion Mark scheme in N.Z., and the National Mark scheme, in England, for selling standardised fruit are being favorably considered by growers and traders in Victoria.

While the overseas markets continue to be unsatisfactory, the further planting of Apples in the Dominions is discouraged by the Empire Producers' Conference.

A permanent London committee, to deal with matters relating to Empire fruit production and marketing, standardised grading, packing, and nomenclature of Empire fruits, is recommended by the Empire Fruit Producers' Conference.

The Federal Dept. of Commerce has notified the Australian Apple and Pear Export Council that it views with concern the unfavorable reports from Australia House regarding the arrivals of immature Apples this season.



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ORCHARD SPRAYS.

Combinations Reduce Expenses.

Lime Sulphur: Lead Arsenate: Bordeaux Mixture: Nicotine: Collodial Sulphur.

Collodial Sulphur Will Control Brown Rot.

(By Dr. G. H. Cunningham, Mycologist, Plant Research Station, Palmerston N., N.Z.)

SOME EXCEEDINGLY VALUABLE experimental work has recently been undertaken at the Plant Research Station, Palmerston North, N.Z., by Dr. G. H. Cunningham, Mycologist.

Fruitgrowers are cordially appreciative of the efforts of this scientist, if for no other reason than that the experiments have resulted in the reduction of spraying costs to the extent of many thousands of pounds sterling.

Dr. Cunningham attended the conference of Scientists at Canberra in June.

On the subject of combination sprays, Dr. Cunningham recently stated (in the "N.Z. Journal of Agriculture") that it was customary in N.Z. to combine orchard sprays with a view to reducing the number of applications. Judicious combination may halve the number of applications, and thus reduce the total spray costs considerably. Certain combinations possess the additional advantage of improving the therapeutant value of the individual sprays.

The major factors which determine the advantages or disadvantages of combination are: (a) The chemical nature of the spray compounds employed; (b) their physical properties; (c) the risk of injury to foliage and fruit; (d) the concentrations employed; (e) the fungous diseases and insect pests present; (f) previous or subsequent sprays applied to the plant; and (g) the effects of additive compounds of the nature of spreaders, activators, or adhesives. Of these, the aspects of disease and pest control, and of safety to the plant, are of primary importance; consequently combinations are discussed principally from these viewpoints.

The sprays in current employment are (1) lime sulphur, (2) colloidal sulphur, (3) lead arsenate, (4) Bordeaux (or Burgundy) mixture, (5) nicotine or nicotine sulphate, and (6) petroleum oils.

Lime sulphur is employed as a fungicide and, to a lesser extent, as an insecticide. A 1 per cent. concentration is moderately effective (though inferior to petroleum oil) as a controllant of scale insects when applied during the dormant period. It is principally employed as a summer fungicide, being applied to pome fruits, stone fruits, vegetables, etc., at concentrations of from 0.083 per cent. to 0.1 per cent. (the former concentration for less tolerant varieties) for control of black-spot of Apples, and leaf-rust and brown-rot of Peaches, etc. The spray is also of value in combating soft-bodied insects, though seldom used alone for the purpose.

Colloidal sulphur is the most efficient fungicide to employ against mildews. It is also effective against leaf-rust and brown-rot of stone fruits, and Tomato leaf mould. The spray is applied in the orchard at the concentration of 4 lb. of the paste to 100 gallons of water; under glass 2 lb. give comparable results.

Bordeaux mixture is the most efficient fungicide for the control of fungi other than mildews. Two concentrations are employed, 5-4-50 at green tip on pome fruits and bud movement on stone fruits; 3-4-50 for summer applications to Pears, Tomatoes, and other small fruits, potatoes, and other vegetables.

Lead arsenate is a stomach poison used to combat chewing insects such as codlin moth, leaf-roller, caterpillar, bronze-beetle, and Cherry slug. The standard concentration employed in the Dominion is 1½ lb. powder or 3 lb. paste per 100 gallons of water. It may be applied with safety to pome fruits, small fruits, potatoes, and most garden vegetables and flowers; but is unsafe to use on stone fruits other than English Plums.

Nicotine or nicotine sulphate may be employed during the growing season on most plants, without risk of injury, to combat soft-bodied insects, such as aphides, leaf-hopper, mealy-bug, and red mite. The standard concentration recommended is 0.05 per cent. nicotine.

Petroleum oil is employed to destroy insect eggs during the dormant season, and against soft-bodied insects during the growing period. For dormant applications winter oil is applied at a concentration of 4 per cent. against San Jose scale, and 3 per cent. against other scales. Summer oils are applied at concentrations of 2 per cent. on citrus, and from 1.0 to 1.5 per cent. on pome and stone fruits.

Simple Combinations.

1. LIME SULPHUR.

(a) Plus Colloidal Sulphur. — During the past three seasons this combination has been widely used throughout the Dominion. It has proved to be effective in combating black spot and powdery mildew of Apples, and leaf-rust and brown rot of stone fruits. At concentrations of 2 lb. of colloidal sulphur to 100 gallons of 0.083 per cent. lime sulphur, satisfactory control of these diseases may be secured without risk of leaf scorch. A "spreader" is unnecessary with the combination.

(b) Plus Acid Lead Arsenate.—This combination has been employed for many years in the Dominion—since the introduction of commercial lime sulphur, in fact—for control of black spot and chewing insects of the Apple.

Unless prepared in the manner outlined below, the combination is liable to cause severe leaf scorch and fruit russet.

First fill the spray-tank with lime sulphur solution. To the required quantity of lead arsenate powder add double the quantity of hydrated lime. Mix into a thin paste with water, and with the agitator running, pour slowly into the tank. Apply the combined spray as rapidly as possible after its preparation. Use hydrated lime in preference to a spreader.

(c) Plus Bordeaux Mixture.—No advantage is gained, so far as is known, by combining lime sulphur and Bordeaux mixture.

(d) Plus Nicotine or Nicotine Sulphate. —This combination may be used for combating fungi and soft-bodied insects attacking pome fruit and stone fruit trees. It is safe to employ, since no reaction occurs which is liable to affect the efficacy of either spray, or to induce injury in excess of that caused by lime sulphur alone, either with nicotine sulphate, or, as we have ascertained, with nicotine. It is unnecessary to employ

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(TAR DISTILLATE)

THE PERFECT WINTER WASH FOR FRUIT TREES

During recent years, much consideration has been given to Tar Distillates as a Winter Wash for fruit trees, and as a result of extensive research and careful experiments, "VALLO" OVICIDAL WASH is put forward as a means of control of Aphids and other destructive insects.

During Autumn, the eggs of Aphids and other destructive insects are laid on the shoots and branches of the tree, frequently many eggs being laid together, and they are usually well hidden from view. These eggs hatch out during early Spring and cause untold damage to leaves and young shoots and also distorted growth and loss of vigour to the trees.

The greatest contributing cause of unsuccessful control of these pests is in the fact that spraying is frequently carried out when the mischief has already been done.

"VALLO" OVICIDAL WASH is to be used during the dormant period of the tree, and, if used in strict accordance with directions, and properly applied, will give 100% immunity from Aphid infection.

A considerable saving is effected by using "VALLO" OVICIDAL WASH for the reason that it will obviate the necessity of Spring Spraying for Aphis, thereby saving a considerable amount of time and labour.

Recommended dilutions determined after tests in many Fruit-growing areas:

APPLES AND PEARS: Use 4 gallons of **"VALLO" OVICIDAL WASH** to make 100 gallons of Spray. Spraying may be carried out with entire safety up to the end of August, but is not recommended for use at any later period.

PEACHES, NECTARINES, CHERRIES, PLUMS, AND OTHER STONE FRUITS: 3 gallons of **"VALLO" OVICIDAL WASH** to make 100 gallons of Spray. Spraying should be carried out during June and July.

Package: Barrels, 40 gallons; Drums, 5 gallons.
Cases: 4 x 2, gallon tins; 8 x 1, gallon tins.

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Python is giving universal satisfaction. The briefest testimonial, taken from hundreds, is from the Portland Cool Store & Packing Shed Pty. Ltd., and states:—

"Having used your wire strapping machine throughout the past export season in our packing shed I would like to express our entire satisfaction with the machine. IT IS CERTAINLY THE FASTEST AND MOST ECONOMICAL MACHINE WE HAVE USED.

(Signed) Hugh. M. Williamson, Secretary."

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with the combination an activator to liberate the nicotine from the nicotine sulphate, the lime sulphur acting in this capacity. No advantage is to be gained by the addition of commercial lime casein "spreader" to the combination; and soap—recommended by manufacturers for use with nicotine or nicotine sulphate, when applied alone—should not be employed, as it reacts with the lime sulphur to form insoluble calcium soap.

(e) Plus Petroleum Oils.—No advantage is to be gained by combining lime sulphur with winter oil. The oil is most effective in destroying insect eggs when applied during early dormancy, whereas lime sulphur has little, if any, value as a fungicide if applied at this period. The latter may be used alone to destroy insect eggs at 1 per cent. concentration), but in such a case there is no point to be gained by using the oil spray.

It is unsafe to combine lime sulphur with summer oils emulsified or stabilised with soaps or ammonium compounds. When ammonium compounds have been employed for the purpose, soluble sulphur compounds are produced, which are highly toxic to plant tissues. If soaps are used as emulsifiers, they react with the lime sulphur, leading to the formation of insoluble calcium soaps and breaking of the emulsion.

Injury is also liable to follow when lime sulphur is applied to trees sprayed previously with summer oil emulsified or stabilised with ammonium compounds, or vice versa. The obvious method of avoiding this injury is to employ an oil which does not contain ammonia in free or combined form. This we have demonstrated by applying to Apple trees, without injury, a combined spray of lime sulphur and a straight summer oil emulsified with lime casein. Alternatively, this injury may be avoided by applying the oil spray from five to seven days in advance of the lime sulphur (or colloidal sulphur) spray; or, if sulphur sprays have been applied previously to the trees, by allowing ten days to elapse before applying the oil. Gross and Fahey (1930) claimed that the addition of 5 lb. of hydrated lime per 100 gallons of oil spray (0.75 per cent. concentration) made it safe to apply within a day or so following lime sulphur.

(f) Plus Iron Sulphate.—Not recommended.

(g) Plus Aluminium Sulphate. — Not recommended.

(h) Plus "Spreaders."—Our experiments have shown that lime sulphur, being a caustic alkali applied as a liquid, has excellent wetting and spreading properties, which are not materially improved by the addition of casein or lime casein "spreaders." Soaps cannot be employed, as they are precipitated as insoluble calcium soaps. Consequently, no advantage is to be gained by the addition of available commercial "spreaders" to lime sulphur or the lime sulphur combinations discussed above.

2. LEAD ARSENATE.

(a) Plus Lime Sulphur. (See section 1 (b).)

(b) Plus Colloidal Sulphur.—This combination may be used when it is necessary to combat chewing insects and mildews. Our experiments indicate that no increase in injury follows the application of 1½ lb. lead arsenate and 4 lb. colloidal sulphur per 100 gallons. A "spreader" is unnecessary with the combination, since the colloidal sulphur contains appreciable quantities of a protective colloid which serves this purpose.

(c) Plus Bordeaux Mixture.—This provides a good stock spray for combating chewing insects, and endoparasitic fungi attacking plants which will tolerate summer applications of Bordeaux mixture. No significant chemical reaction occurs in the combination.

The preferable method of making the combined spray is first to prepare a full tank of Bordeaux mixture, then, with the agitator running, to add slowly the lead arsenate mixed with water to a thin cream.

As the combination has poor spreading and adhesive properties, owing to the physical nature of both components, applications would be materially improved by the addition of a "spreader." Soaps cannot be employed, as they react with lead arsenate to form water soluble arsenic, and with the excess lime of the Bordeaux to produce insoluble calcium soaps. Casein or lime casein improves spreading, but adversely affects the adhesive properties of the combined spray. Improvement in both factors may be secured by the addition of a low concentration (0.25 per cent.) of a highly refined unemulsified summer oil.

The combination of Burgundy mixture with acid lead arsenate is not recommended, for the soda of the Burgundy reacts with the lead arsenate to produce appreciable quantities of water soluble arsenic.

(d) Plus Nicotine or Nicotine Sulphate.—A combination of acid lead arsenate plus nicotine may be used to combat both chewing insects and soft-bodied insects. The combination is safe to apply to all plants which will tolerate lead arsenate, as no significant reaction occurs when the two sprays are combined.

An activator is necessary when nicotine sulphate is employed. For the purpose hydrated lime may be used at the rate of 5 lb. per 100 gallons of spray. Soaps cannot be used, for, as has been shown, they react with the lead arsenate to produce water soluble arsenic.

(e) Plus Petroleum Oils. — Petroleum oil and lead arsenate may be combined with advantage to produce an insecticide which is effective in combating both soft-bodied insects and chewing insects. The oil additionally improves the adhesive and spreading properties of the arsenate. For this reason the combined spray has recently been widely used in the United States for the control of codlin moth. In fact, adhesion is so improved that removal of spray residues has become a serious problem in that country, necessitating the use of costly washing machinery. Consequently, in the Dominion, the use of the combination is advisable only during the earlier part of the season against chewing insects (as bronze beetle), which are difficult to combat.

The risk of injury following applications is considerable if the summer oil contains ammonium compounds, owing to the reaction of these with the arsenate to liberate appreciable volumes of water soluble arsenic. Oils containing soaps as emulsifiers cannot be employed for the same reason. Consequently, the combination is recommended only if prepared as follows: Emulsify a straight (unemulsified) summer oil by stirring into it the lead arsenate, mixing vigorously to form a stiff paste. To this add small quantities of water, stirring continuously until a thin cream is produced. Pour this slowly into the spray-tank (having filled this previously with water), with the agitator running. The spray should be applied as rapidly as possible, without stoppage, for, if agitation ceases, the emulsion will break, and the oil form a film on the surface.

According to Pinckney (1923), if the oil is emulsified with soap prepared entirely from oleic acid, no reaction occurs with the arsenate. Unfortunately, such a product is not available on this market.

(f) Plus "Spreaders."—As lead arsenate has poor spreading and adhesive properties, it is advisable to apply it combined with a "spreader." Soaps cannot be used for the purpose, as they react chemically to produce water soluble arsenic. Casein and lime casein are efficient spreaders, but unfortunately do not materially improve adhesion; on the contrary, they tend rather to reduce the volume of lead arsenate remaining on the tree, this loss being excessive when the casein content is in excess of 4 oz. per 100 gallons of spray.

The most efficient of the available "spreaders" are low concentrations of highly refined summer oil or fish-oil. The former may be employed at a concentration of 0.25 per cent, the latter at 4 fluid ounces per pound of arsenate powder. Injury is liable to occur if either is emulsified or stabilised with ammonia or soap compounds. It is therefore advisable to use unemulsified oils, and to emulsify them with the arsenate immediately before application in the manner outlined in the previous section.

3. BORDEAUX MIXTURE.

(a) Plus Lime Sulphur. (See section 1 (c).)

(b) Plus Colloidal Sulphur.—Little is to be gained by the use of this combination, as when both ectoparasitic and endoparastic fungi are present a preferable spray would be the lime sulphur

plus colloidal sulphur combination discussed above. (Section 1 (a).)

(c) Plus Lead Arsenate. (See section 2 (c).)

(d) Plus Nicotine or Nicotine Sulphate. — This combination may be used for combating fungous diseases (excluding mildews) and soft-bodied insects on plants to which Bordeaux may be applied during the growing season. At standard concentration no increased injury is likely to occur, for, according to Safro (1915), nicotine (as the sulphate) may be combined with Bordeaux without chemical change.

No activator is necessary with this combination, the excess lime of the Bordeaux acting in this capacity. A "spreader" is advisable, however. The Bordeaux may be replaced with Burgundy mixture without risk of increased injury.

(e) Plus Petroleum Oils.—With winter oil no advantage is to be gained by use of this combination, for the oil should be applied during early dormancy for effective destruction of insect eggs, whereas Bordeaux is useless if applied before green tip on pome fruits or bud movement on stone fruits.

Summer oil may be combined with Bordeaux for combating fungous diseases and insect pests of Citrus. This combination has been employed in the United States since 1919, first with kerosene emulsion, subsequently with petroleum oils. The oil should be used at a concentration of 2 per cent., and unemulsified, for, if an ammonium or soap emulsifier or stabiliser is present it reacts with the excess lime of the Bordeaux, leading to the production of insoluble calcium soap and the liberation of free oil. To prepare the combination, fill the tank with 3-4-50 Bordeaux, and then add the oil, first emulsified with 3 lb. of hydrated lime. The oil and lime should be mixed into a stiff paste, and small quantities of water then added, until the mixture assumes the consistency of thin cream. This is poured slowly into the tank, while the agitator is running.

(f) Plus Hydrocyanic-Acid Gas.—American workers have shown that severe injury is liable to follow when Citrus trees sprayed with Bordeaux mixture are fumigated subsequently with hydrocyanic-acid gas. This injury is liable to occur at any time up to six months after an application of Bordeaux, and even after eleven months, should the spray have been heavy and complete. Although fumigation is not practised in the Citrus orchards of the Dominion, the matter is nevertheless of significance, as the process is employed for combating insect pests of the glasshouse, where, under similar conditions, severe injury may occur.

The injury is correlated with the ratio of copper sulphate to lime employed in making the Bordeaux mixture. When this ratio is 1 : 0.2 (approximately neutral) injury does not occur, as an insoluble cuprous cyanide is produced; but as the amount of lime in increased the degree of injury is also increased. Beyond the neutral point, soluble cupric cyanide is produced; and in mixtures with ratios greater than 1 : 1 increasing quantities of a soluble double cupric cyanide is formed, injury increasing proportionately. They considered that injury from this source should not occur if a neutral Bordeaux spray was employed. This spray is liable to cause foliage injury to plants grown under glass, so that it is advisable to replace Bordeaux with sulphur sprays when fumigation is to be practised.

(g) Plus "Spreaders."—When properly prepared, Bordeaux mixture has good adhesive but poor spreading properties. Although both factors may be improved by the use of a suitable "spreader," it is difficult to procure a type which will improve coverage without reacting adversely with the Bordeaux. Soaps cannot be employed, as they are converted into insoluble calcium soaps by the action of the excess lime of the Bordeaux. Casein and lime casein improve its spreading properties, but actually decrease the adhesion of Bordeaux. Recent experiments have shown that a satisfactory agent to employ for the purpose is a low concentration (0.25 per cent.) of a summer oil. This should be unemulsified, and the combination prepared in the manner outlined under section 3 (e).

4. NICOTINE OR NICOTINE SULPHATE.

(a) Plus Lime Sulphur. (See section 1 (d).)

(b) Plus Colloidal Sulphur.—This combination may be employed without risk of injury to combat mildews and soft-bodied insects, being especially useful under glass. An activator is necessary when nicotine sulphate is used. For the purpose soft soap (1 lb. for each pound of colloidal sulphur may be used with advantage, being additionally an efficient wetting agent.

(c) Plus Lead Arsenate. (See section 2 (d).)

(d) Plus Bordeaux Mixture. (See section 3 (d).)

(e) Plus Petroleum Oils.—No advantage is to be gained by combining nicotine with winter oil, since the former is effective only against soft-bodied insects.

With summer oil, nicotine may be combined with advantage, the combination being superior to either spray when employed against such pests as woolly-aphis, mealy-bug, thrips, or red mite under glass, both the wetting and spreading properties of the nicotine being improved. If the summer oil is emusified or stabilised with soaps or ammonium compounds, no activator is necessary with either nicotine or nicotine sulphate.

(f) Plus "Spreaders."—When nicotine or nicotine sulphate is employed alone it is of advantage with the former, and essential with the latter, to employ an activator. This increases the volatility of the nicotine and liberates it from nicotine sulphate. For the purpose manufacturers recommend soft soap, at from 4 lb. to 5 lb. per 100 gallons of spray. This material is satisfactory for the purpose, and possesses the additional advantage of increasing the wetting properties of the spray. It has, however, the disadvantages of being somewhat costly and variable in composition. Cheaper and equally efficient activators are hydrated lime (5 lb. per 100 gallons), or washing-soda (3 lb.). When soap or washing-soda is employed, an interval of ten days should elapse before a lead arsenate spray is applied to the plant.

5. COLLOIDAL SULPHUR.

(a) Plus Lime Sulphur. (See section 1 (a).)

(b) Plus Lead Arsenate. (See section 2 (b).)

(c) Plus Bordeaux Mixture (See section 3 (b).)

(d) Plus Nicotine or Nicotine Sulphate. (See section 4 (b).)

(e) Plus Petroleum Oils.—So far as I am aware, this combination has not been tested. With winter oil no advantage would be secured by the combined spray. It may be worth testing the efficacy of low concentrations (from 0.1 to 0.25 per cent.) of summer oil as a wetting and spreading agent to improve the efficacy of colloidal sulphur against such diseases as Tomato leaf-mould. At present, however, the combination is not recommended, for nothing is known as to the possible reactions which may occur in the spray or subsequently on the tree.

(f) Plus "Spreaders."—The manufacturers of colloidal sulphurs recommend the employment of soft soap (1 lb. for each pound of the paste) to improve its spreading properties. As the brands we have tested contain appreciable volumes of a protective colloid (one containing 15 per cent. of sulphite lye), this addition appears to be unnecessary.

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SYDNEY. BRISBANE. ADELAIDE. PERTH.
GERRARD The Tie That Binds
APPLE AND CITRUS PACKING CHARTS ARE AVAILABLE FREE ON APPLICATION....GERRARD SERVICE

Frost Prevention BY.. Orchard Heating

Importance of alarm System .·. Orchard Heating a Sound Business Proposition.

(By J. B. Harris, Dip. Hort., Horticultural Instructor, Sth. Aust. Dept. of Agriculture.)

(Continued from the June issue.)

Importance of Alarm System.

On one occasion, however, the alarm did not ring on the night of a frost, and damage was caused. On this subject Mr. Harris writes:—

This breakdown of the alarm system was investigated by members of the Executive Committee, together with the Writer, about two hours after Mr. F. W. Boehm had reported that a severe frost had occurred and the alarm bell had failed to ring. The U tube alarm thermometer which is connected to an electric bell system is so arranged that the electric current passes through the mercury column and so completes the circuit and rings the bell when the temperature reaches 34 degrees. Mr. Boehm reported that the bell had not rung, and when he examined the thermometer at daylight the mercury was still well beyond the point of contact although the bell was not ringing. The bell had always rung previously when the mercury reached 34 degrees and thus made contact, and when tested by spraying, as already mentioned, with ethyl chloride, in the presence of members of the Committee it was found that the bell rang perfectly when 34 degrees was recorded.

As in the case of frost prevention by orchard or vineyard heating the alarm system is of paramount importance, it is considered worth while to give here a likely explanation of the failure of the alarm. Also it is deemed worth while to quote "Californian Agricultural Extension Service," Circular 40, which unfortunately, was not to hand when this test was set up. With reference to thermometers this circular states, pages 37 and 38, "The U tube type of thermometer which reads both maximum and minimum is very likely to be out of order, and is not recommended for use in connection with orchard heating." And again, "In districts where there are no frost warning patrols frost alarms are frequently used. In order to be safe they should be of the type that rings when the circuit is **broken** rather than when the contact is made. If anything goes wrong with the line the bell rings. This will occasionally result in the grower being called too soon. The alarm should be

tested each night

by pulling the switch."

Fig. 5 represents an ordinary maximum and minimum U tube thermometer with electrical contact points for use as a frost alarm, the sketch being made from the thermometer used in the experiment referred to. When the temperature is falling the mercury column D falls in the right hand tube and rises relatively in the left hand tube. When the temperature falls to 34 degrees F. the mercury rises sufficiently high in the left hand tube to connect the electric wires which are inserted into the tube from the terminals A and B, thus the electric circuit is completed and the alarm bell is rung. Should a bubble or a break appear in the mercury column between the wires inserted from terminals A and B as at C, the electric circuit will not be completed although the mercury has fallen below 34 degrees on the right hand column and risen above 34 degrees on the left hand column. Such a break is known to have occurred in this particular thermometer on a previous occasion, and it is presumed that the column again broke when the apparatus failed to ring the alarm bell when the temperature reached 34 degrees F. on the night of October 25 or early morning of October 26. Although this alarm system has operated quite satisfactorily on very many occasions when chilled artificially or naturally during a period of 59 days it is known to have developed a break in the mercury column once during that period, and it is now assumed that it developed a similar fault on the occasion when it failed to work the alarm bell.

Minimum Alcohol Thermometer set horizontally in shelter, and Heaters in position in Orchard.

Fig. 6 represents an ordinary thermometer fitted with terminals and wire inserts and wiring for frost alarm purposes. This type of frost alarm thermometer is designed to ring the alarm bell when the continuous electric circuit which is passing from terminal A to B through the mercury column D is broken by the mercury column falling below 34 degrees, at which point the wiring from terminal A is inserted. Similarly, if a bubble or break should accidentally form in the mercury column between the points A and B the alarm bell will ring on account of the broken circuit. With the latter type of alarm two circuits—one of which is continuous, and operating a switch by means of a magnet—are used, the second circuit operates the bell. When the first circuit is broken through the temperature falling below the point A the magnet releases the switch which brings the second circuit into operation and thus the alarm bell is rung.

Summary of Temperatures Recorded.

September 13 — Average temperature of unheated plot, 42 degrees. Average temperature of heated plot during one

hour's heating (124 heaters with spreaders on all the time), 47.75 degrees.

September 21—Average unheated, 38 degrees; heated average, 40.62 degrees. Time of heating not known, but less than one hour, spreaders on, 127 heaters.

September 24 — Average unheated, 32.66 degrees. Average heated plot, 34.8 degrees. Heated by 58 heaters for 1¼ hours with spreaders on. Average of heated plot, exclusive of thermometer C where no heaters lit, 35.11 degrees.

October 26 — Average unheated temperatures, taken 3.15 a.m. to 5.45 a.m., equals 30.58 degrees. Average on heated plot, heated from 2.45 a.m. to 6.30 a.m., temperatures taken same times as unheated plot, 37.6 degrees; 127 heaters burning half to one hour with spreaders off, afterwards with spreaders on.

In connection with the above summary it should be borne in mind that the lowest temperature reached may do more damage to the crop in one half-hour than a low average will do over a long period.

Rate of Fuel Consumption. — It was found necessary to re-fuel some of the heaters, but not the majority, during the 3½ hours' burning on October 26. It was found at daylight that some of the heaters contained an inch or more of water as an aftermath of flood and rain; this accounted for their tendency to boil over and to require re-fueling after about three hours' burning. Re-fueling can be carried on without extinguishing the heater by simply pouring in more fuel.

Economic Aspect of Orchard Heating. —It would appear from temperature records and orchardists' experience that what is required in this district is protection against frosts which may occur on two or three nights each spring, generally between the hours of, say, 2 a.m. and 6 a.m. From Californian and New Zealand experiments, and from this test, we can deduce that 80 to 100 5-quart Lard Pail heaters will be sufficient to maintain a temperature of 33 degrees under conditions of 27 to 28 degrees on the unheated area. In other words, we can expect to maintain an

increase of 5 degrees

which will be sufficient to counteract the damage done by general spring frosts. With spreaders off and a consequent greater fuel consumption a much higher range of increased temperature could doubtless be obtained. Heaters can now be obtained in Adelaide in lots of 150 at a cost of 1/9½ each. They can be purchased cheaper in greater quantities, and I propose later to suggest modifications in design and manufacture which should also cheapen them. Fuel costs from 5d. to 6½d. per gallon, plus freight, when used for primary production and exempted from sales tax. The heaters are said to last for ten years with care. Therefore, cost of heating one acre with 100 heaters would be:—

For one heating of four hours—			
annual rental value of 100 heaters	£0	18	0
100 galls. of fuel oil at 6d. ..	2	10	0
	3	8	0
For two heatings of four hours each—extra fuel	2	10	0
	£5	18	0

The foregoing gives an outline of the costs of orchard heating, as conducted in this experiment, without taking into account interest on the capital outlay and labor. It is proposed to deal with this aspect more fully in a later issue, together with a statement showing values of crop harvested from the heated and unheated plots.

Many growers, however, who have watched the experiment with great interest are now of the opinion that it is economically possible and advisable to protect fruit crops from occasional spring frosts by adopting the practice of orchard heating.

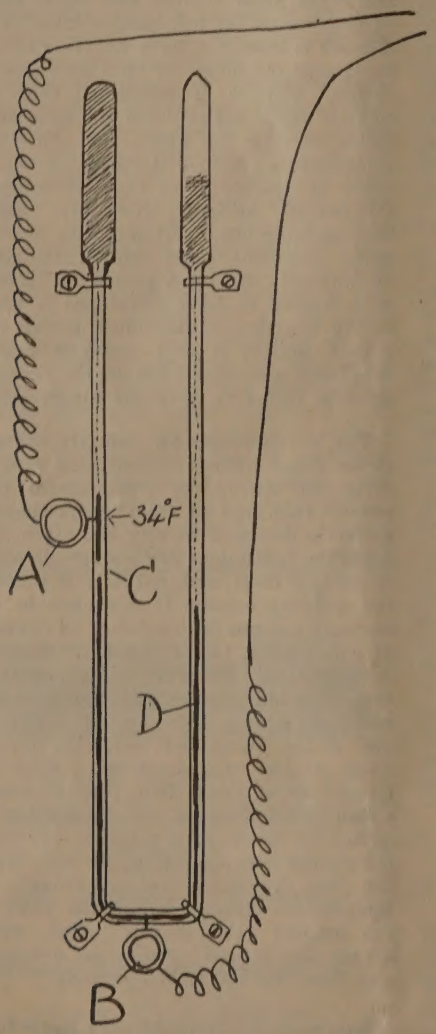

Fig. 5.—Maximum and Minimum U-tube Thermometer.

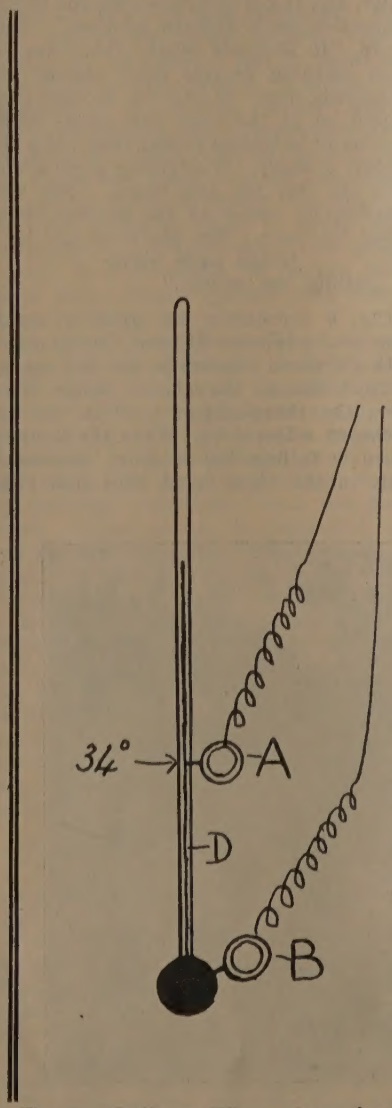

Fig. 6.—Ordinary Thermometer fitted with Electric Terminals.

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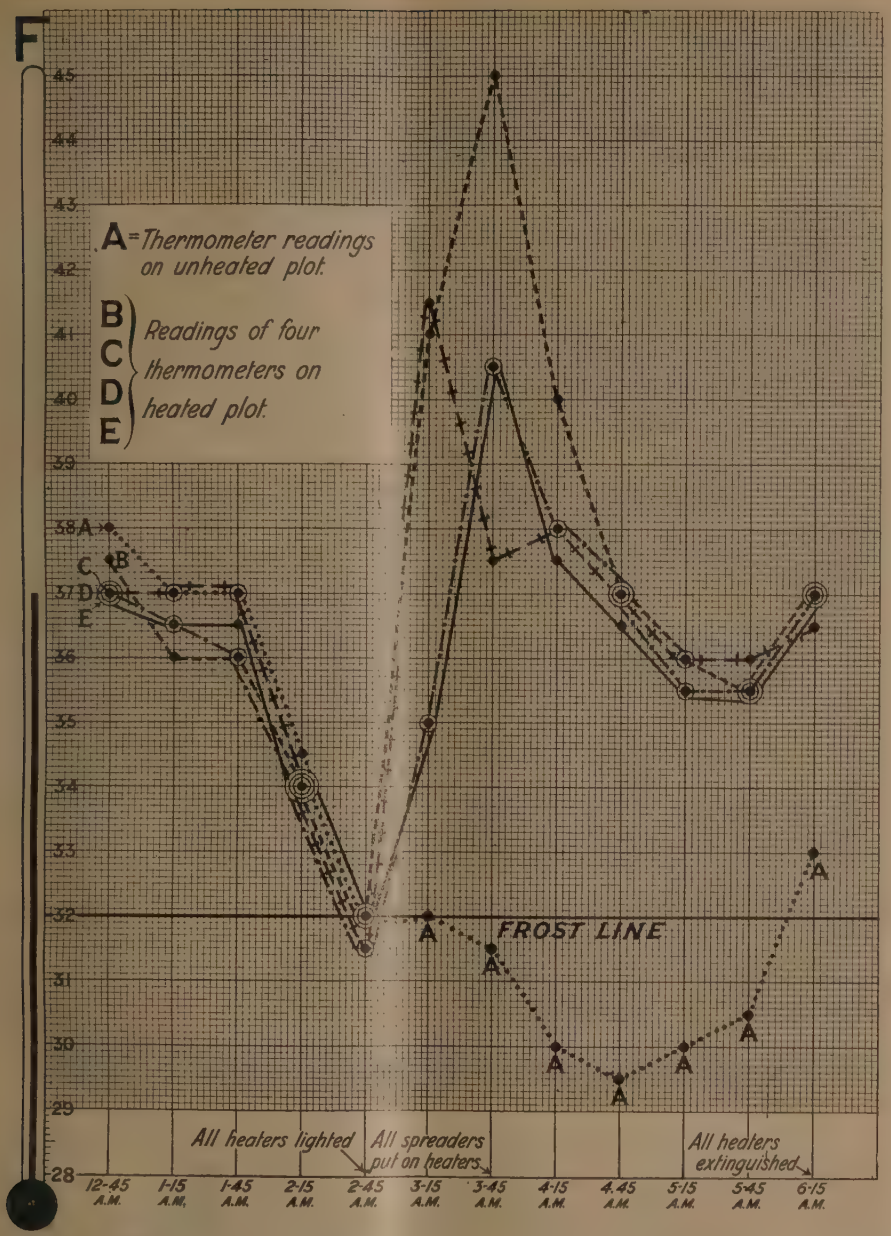


Fig. 7.—Graph illustrating Record of Heating on October 26th.

IMPERIAL FRUIT SHOW.

Opportunity for Australia to Compete.

Particulars, entry forms, copies of the schedules of classes and prizes together with the rules and necessary forms for the Imperial Fruit Show, which will be held at Leicester, England, from November 2 to 10, 1934, are available, and may be obtained from the Secretary, Department of Commerce, 419 Collins-street, Melbourne. Entries may be lodged at that address.

Australian exporters are given the opportunity of demonstrating in competition with other portions of the Empire the high quality which our goods have reached and of displaying Apples, Grapefruit, Lemons, Oranges, dried fruit, canned fruit, honey, jams and preserves, to the British public.

SOUTH AFRICAN FRUIT EXPORT.

The exports of deciduous fruit to U.K. increased from 1,800,000 packages in 1933 to 2,300,000 packages in 1934.

The export of Citrus from South Africa is increasing.

"Could you give a poor fellow a bite?" asked the dusty tramp.

"I don't bite, myself," answered the lady of the house, "but I'll call the dog."

Prevention of Frost Damage

DURING THE PAST YEAR various trials have been made to determine the efficiency of oil heaters used for the purpose of frost prevention. These have been reported on individually from time to time, some of them having been successful, and some partially so..

Most of the tests were conducted by, or with the co-operation of the Shell Company, and were part of a definite research campaign. The object of this was to determine not only the most suitable type of heater, and the efficiency of heaters for any particular location, but also the relationship between the efficiency and the type of country which was being heated.

Before any actual trials were run, laboratory tests were made on over 20 different types of heater, including representative American makes, to determine which was the most suitable for use with the fuel oil available in Australia. As a result, a heater was produced locally which appeared to give the most satisfactory results, this being a modification of one of the American burners.

Using 95 of these heaters, trials were run over a period of several weeks on a block of Passion-fruit owned by Mr. R. Fulton, at Wandin, Victoria. This block is situated on a hillside, in the middle of very broken country, and it was found that, even on a frosty night, it was exposed to appreciable drifts of wind coming from varying directions. Under these conditions, the heat generated was carried away almost as quickly as it was formed, with the result that the number of heaters required, and the amount of oil which had to be burned to produce any particular temperature rise, was excessive. Actually, the oil consumption required to produce a temperature rise of 4 deg. F. was about 65 gallons per hour for each acre. Therefore, although frost could quite definitely be prevented, the cost was too high, especially in view of the fact that Passion-fruit require protection throughout the winter.

As the result of the experience gained in operating these heaters, further laboratory tests were made, with the ultimate result that plain steel bucket heaters (known in America as "lard pail" heaters) were adopted for future trials. These have outstanding advantages in cheapness, robustness, ease of lighting, reliability and easy storage, and, although they may not be quite so efficient as the more complicated American type of heater, the difference, as shown by actual trials in an orchard, is very small.

Using these bucket heaters, trials were run on an acre of Apples in the

orchard of Mr. W. Eagle, of Harcourt, Victoria. The nature of the country in this case was entirely different from Wandin, the orchard being almost flat, and situated near the bottom of a wide, shallow valley. Conditions are favorable to the formation of frosts, and in past years severe losses had been sustained by growers in the district. The practice has been adopted of using wood fires to ward off the frosts, but the trouble and expense of laying the fires, together with the shortage of firewood, has led growers to investigate alternative methods.

Fifty heaters were installed on one acre, each holding four gallons, and burning at the rate of approximately 0.6 gallons per hour. Using all of these together, with a total oil consumption of 30 gallons per hour for each acre, a temperature rise of 8 degrees F. to 10 degrees F. could be produced; while, with only half the number of heaters running, the temperature rise was 3½ deg. F. to 5½ deg. F. For an ordinary frost, therefore, the number of heaters required per acre would not be more than 25, and, assuming that they have to be burned for, say, six hours, the total oil burned will be 90 gallons for each acre. This at, say 7d. per gallon, would cost 52/6, or approximately 6d. per tree.

With a larger area, the number of heaters required per acre would be much smaller, and the cost per tree would be correspondingly reduced.

Oil heating is therefore an eminently economical proposition, and it is also so convenient and reliable that a number of other growers in the neighbourhood have already bought heaters in readiness for next spring.

Concurrently with the Harcourt experiments, tests were conducted by the Light's Pass Frost Combating Association, using Shell Fuel Oil, on an acre of Apricots in the orchard of Mr. P. Bohm, at Light's Pass. In this case, the heaters were of similar type to those used at Harcourt, but had a capacity of only one gallon, and a burning rate of 0.25 to 0.3 gallons per hour.

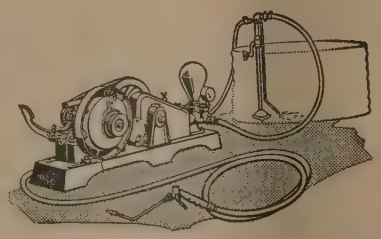
Using 125 of these on one acre, the temperature rise was about 9 degrees F., and, during a severe frost, which destroyed the fruit in neighboring orchards, the area which was being protected was definitely saved from damage.

The results obtained are thus very similar to the Harcourt results, which is to be expected, since the nature of the country is very similar. Here, again, neighboring growers are adopting oil heaters as a protection for future seasons.

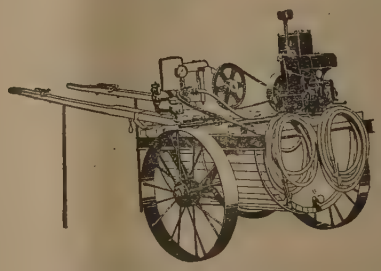
The main factor which affects the efficiency of heaters, and which, in turn, is governed by the local climatic and geographical conditions, is what is known as "temperature inversion." When a frost forms, it is found that the air a few feet above ground is appreciably warmer than the air actually on ground level, and, within limits, the temperature rises progressively with the height. This layer of warm air above the orchard forms what is virtually a ceiling, and prevents the escape of heat which is generated by the heaters. Thus, the greater the inversion the lower is the ceiling, and the easier is the task of heating the orchard. In hilly country, the inversion is usually small, and, furthermore, hilly country, even during a frost, is exposed to drifts of wind, so that heating is difficult and costly. In flat country the converse is the case, so that heating is easy, and this accounts for the differences between the results obtained at Wandin, Harcourt and Light's Pass.

We understand that the Shell Company has prepared a booklet which deals fully with the design and arrangement of heaters, the measurement of temperature inversion, the arrangement of test thermometers and alarm thermometers, etc. This booklet combines the experience gained in Australia, with all the information available regarding overseas practice, and should therefore be a valuable guide to growers whose blocks are subject to frost damage. Copies will be supplied free on application to the Shell Company.

There's a Dangar, Gedye Spray for every Orchard Job



Here Are Two Examples



A small, powerful, completely self-contained spraying outfit; has simple, reliable petrol engine; pump delivers up to 200lb per square inch and over 80 gallons an hour; weighs only 120lb; occupies space only 40in. x 8½in.; easily portable on waggon, dray, or sledge; guaranteed.
This plant is delivered ready for use, with suction stand, agitator, and hose, 30ft. delivery hose, 7ft. 6in. rod (in two sections), and spraying rose, complete for £55.

The outfit illustrated above comprises a Myers' self-oiling pump; wooden tank (80 gallons), with mechanical agitator; driven by 1½ or 3 b.h.p. Lister Petrol Engine, hopper cooled. Two 25ft. lengths hose, with cutouts and nozzles. Mounted on two wide-tyre steel wheels, with strong shafts.

For further particulars all models, also easy terms, write to the sole agents for New South Wales:—

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Few Apple Varieties Desired.

Elimination of Lower Grades recommended by the Empire Producers Conference.

A sub-committee of the Empire Producers' Conference recommended further reduction in the number of varieties of Apples exported, by elimination of lower grades.

It was resolved that while the market continues unsatisfactory planting of new areas in the Dominions for export be discouraged. New planting in Britain was left to the decision of home growers.

Permanent Committee Formed.

The conference announced that arrangements have been made to improve distribution of Apples and Pears in Britain without increasing retail prices. **It has been agreed to urge growers in the Empire to adopt standard packing, grading and nomenclature; to eliminate undesirable varieties, and to ensure regular supplies of the best Empire fruit.**

The conference decided to establish a permanent London committee associated with Empire producers' organisations in order to maintain and develop co-operation. A British delegate said he realised that England was the market for the whole Empire in respect of Apples and Pears, and that he anticipated closer future co-operation.

Writing to the President of the Australian Apple and Pear Export Council on May 24, Mr. Brown says:—

"There is a definite British movement to restrict supplies from the Dominions. If we, by more orderly marketing in every way, can maintain a strong and vigorous market at a reasonable level throughout our season, and then hand that on to the British grower, we shall have done our best for him. But if that market is unduly depressed at any time by the presence of unwarrantable quantities of U.S.A. fruit, we can't give that Englishman a strong market, and he will suffer as much as we do. New Zealand's storage programme last year has put every Dominion in wrong with the home producer.

The other vital point that is very serious this year is the arrival of immature fruit. It is no use pretending the first boat fetches the high price. A little good fruit on the early boats does fetch a high price, but the bitter pit this year is very bad—and the lack of color and general immaturity is shocking.

We shall have to consider the early shipment problem very carefully. There is a splendid early demand for good fruit, but arrivals like this drive the buyers to Winesaps, etc., immediately.

The question of the application of the high Swedish tariff on May 1, is one which nobody understands. Various representations are being made through the Foreign Office, etc., but the question is, I think, rather an important one. It practically precludes us from using that market. There appears to be no reason why May 1 should be chosen as the date on which to apply the higher tariffs—it cannot be to protect the home grower there—his Strawberries are not in until July, and so after considerable thought and discussion with Australia House and the trade, I am going to Sweden to make unofficial enquiries, which may assist the preparation of the case against the tariffs here. I feel we cannot afford to let a market of even 100,000 cases go at present if it can be saved.

Regarding claims, I am convinced we should have all claims dealt with by one man, acting on behalf of all shippers. It would, I am sure, mean making many good claims now allowed to go by default, and the collection of all experience and precedent in one office would be of the greatest value. The brokers and receivers frankly don't like being bothered with claims, and would welcome our taking them over.

Also I should like to formulate, and hope to, a common form of policy for all Dominions. The Pacific coast at present get far the best cover—but I believe all the other Dominions' policies are not very good. I am going to discuss that."

PERSONAL.

Mr. W. Nunn, orchard supervisor, Kyabram, recently made available valuable information regarding winter treatment for green Peach aphis, Oriental Peach moth, and codlin moth.

* * *

Mr. W. A. Tate, Cherry grower and cool store proprietor of Breytown, New Zealand, called at the "Fruit World" office early in June. Mr. Tate visited Cherry districts in New South Wales and elsewhere. Mr. Tate is a member of the Board of Directors of the N.Z. Fruitgrowers' Federation.

* * *

Dr. G. H. Cunningham, mycologist of the Plant Research Station, Palmerston North, New Zealand, recently conferred with Federal and State officials and plant pathologists re trade with New Zealand.

Dr. Cunningham also visited the chief fruitgrowing centres in New South Wales, Victoria, South Australia, and New Zealand's policy in this trade will be affected by his report.

Mr. G. A. W. Pope, chairman of the South Australian Dried Fruits Board, and Mr. W. N. Twiss, the secretary, were in Melbourne in mid-June for a meeting of the consultative committee of the Dried Fruits Boards of the several States.

Mr. Everard Ross, of H. Jones & Co., Hobart, visited Sydney during June.

Mr. H. J. Bishop, president, South Australian Fruit Marketing Association, passed through Melbourne on June 21st on his way to Sydney to attend a conference of the Australian Overseas Transport Association, to consider the question of freights on primary produce exported.

Mr. J. W. Blick, manager of the fruit section of the P.D.S., Sydney, has submitted himself for selection as a U.A.P. candidate for the Senate at the next Federal elections. Mr. Blick is prominently associated with the fruit trade of New South Wales, and will have a large following should he be one of the selected candidates of the United Australia Party. He has done splendid work on behalf of the fruit industry for many years, and is on the executive of both the Apple and Pear Export Council and N.S.W. Citrus Association. His services to the industry would be of great value, should he be elected.

ALLEGED LIBEL IN N.S.W.

£40,000 Writs Against H. L. Anthony and N.S.W. Banana Federation.

Libel is alleged against the Banana Growers' Federation Co-operative Ltd., and Herbert Lawrence Anthony, of Murwillumbah, N.S.W., by Sun Kissed Banana (Tweed) Ltd.

Two writs have been issued in Sydney each claiming £20,000.

Mr. Frank Read, M.Ag.Sc., has been promoted to the position of Chief Inspector of Horticulture in the Department of Agriculture for a period of three months on probation. The new position carries a salary ranging from £400 to £600 a year. This position, which has been vacant for some time, was known as Chief Orchard Supervisor, and carried a salary from £384 to £500.

Mr. Read is a popular officer, and is highly esteemed throughout the entire fruit industry of the State. His work on soils and manuring is of a high order, and has proved of great value to all concerned.

In addition to his acknowledged ability as a scientist, Mr. Read has a pleasing personality, and is an accomplished speaker.

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[TAR DISTILLATE WASH]

Has been used by thousands of growers over the last four seasons and has definitely proved to be in a CLASS OF ITS OWN.

OVICIDE has consistently given 100 per cent control of Peach and Cherry Aphis.

Give Your Trees a Clean Start This Season. **NEW REDUCED PRICES.**

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STH. AUSTRALIA.—Elder, Smith & Co. Ltd., Adelaide.
WEST AUSTRALIA—The Westralian Farmers Ltd., Perth.
QUEENSLAND. — Queensland Fruitgrowers' Society Ltd., Cleveland, Brisbane.

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Established 1902

AUSTRALIAN REPRESENTATIVES:

Victoria: J. B. Mills & Co., Aberdeen House, 528 Collins Street, Melbourne.

South Aust.: Messrs. Paterson & Co. Ltd., Adelaide.

West Aust.: Messrs. Paterson & Co. Ltd., Perth.

Tasmania: Messrs. H. Jones & Co. Pty. Ltd., Hobart.

. . THE OPEN FORUM . .

Orchardists and others connected with the industry are invited to contribute their views to the "Fruit World and Market Grower" through the Open Forum.

This paper does not necessarily identify itself with the views here expressed, and reserves the right to reject or curtail, if necessary, any articles submitted.

Export versus Local Consumption of Apples

(To the Editor, "Fruit World.")

Sir,—The question of when an Apple is fit to send to an overseas market is an interesting one. It was brought rather vividly before the eyes of the present Writer lately, as he was sorting out fallen Apples (incidentally some of our terms seem to want revising, the Apples which fell to the ground just lately have been described as "windfalls," but actually the "wind" had a very small part in that, it being due to the excessive dryness of the air and the degree of heat), the eye had become used to the pleasant color of the majority of these Apples, and then rather a shock was received when some cases left over from a picking for export, say ten days before, were also sorted over.

These had been picked at about the most suitable time for export—in the view of Government Inspectors anyway—but both for appearance and flavor would hardly represent the Jonathan Apple as we know it in Australia.

But to go further back in the season, and to quote again from personal experience, the Writer went over about 200 trees to get colored Apples for his first consignment of Apples for the British market, but on visiting the packing shed he found Jonathan Apples going forward which were practically devoid of any red color.

The whole question of early export seems to be viewed entirely from the point of view of the grower: that he wants to pick early to assist the trees to bring the Apples left on the trees to a larger size, also to spread his period of picking over a longer length of time, and to make use of space available then for the Apples on the ships, and also that prices then are usually better than later in the season.

If American colored Apples are on the British market in a mature condition when our early export arrives, however, the contrast must be disastrous, as ours must surely be unappetising, both in flavor and appearance, and anyone purchasing such Apples must be rather disinclined to buy any further supplies of Australian Apples even when they are somewhat more fit for eating later in the season.

Incidentally the Horticultural Division of the Department of Agriculture has actively supported some of this uncolored and very far from mature fruit being sent to England.

It would be interesting to know what quantity of Apples could be profitably placed on the European market if they were landed there in anything approaching perfect condition.

This again raises the point of the conditions under which fruit is carried on the boats. Apples can be allowed to mature on the trees, put in the cool store for some months and then sent in ordinary louvred trucks to Brisbane and arrive in saleable condition: but apparently the same fruit would not stand even the voyage to England, although sent away at the picking time.

If this is the case, possibly the conditions under which the Apples are carried on the boat could be improved, and it might be necessary for the growers to pre-cool their fruit and have it forwarded in specially cooled trucks—this, of course, is in the case of Apples approaching maturity.

If the season for export was shortened, and less Apples disposed of in that way, it would be necessary to improve the sale of Apples in Australia.

Another "side-line" of thought — if export is only payable at present owing to the "exchange" being added, what will happen (if and when—too deep finance for the average orchardist!—) the exchange value is lessened or altogether lost.

If, as Mr. Clapp has pointed out, the Australian public consumed as many Apples per head as the Americans do, we could market all our Apples in Australia, and thus supply it with a thoroughly healthy food in first-class eating condition.

The whole question of marketing the fruit in Melbourne by the growers requires careful consideration. At the present time owing to lack of confidence and co-operation, lack of business capacity and state of panic the buyers are able to do what they like with the sellers, e.g. at a time when Peaches were sold at a shilling per case, a buyer offered eight shillings for ten cases!

The question of providing fruit in country districts also still requires attention—an instance came under the writer's notice in which a profitable trade has been opened up in the Western district of Victoria which had apparently been almost untouched before.

Apparently it would need a Mussolini to get many growers to join in any scheme requiring co-operation and mutual trust.

"PENINSULA GROWER."

[The views of other growers on the points raised would be appreciated.—Editor, "F.W."]

The Canning Fruits Industry

Mr. E. Blackburn, of Merrigum, writes in a letter to the Editor, regarding the loss of £41,607 sustained by a Goulburn Valley cannery, and states that the report of the Ardmona Cannery indicates certain conditions which cannot be substantiated, i.e. (inter alia) that the Ardmona and Kyabram canneries were the aftermath of the Government's development policy of 1916—yet it was in Shepparton where the marked increase took place, and this was met by the erection of Shepparton's fine processing factory. The difficulties confronting the industry are apparent, both at the orchard and at the factory, and are inseparable.

Owing to fungus diseases, continued trade in fresh fruit with Melbourne and Sydney is questionable. It would be better to concentrate on factory requirements, at reasonable returns per acre, and a raw product to processors at a reasonable competitive figure.

A survey of the present varieties for canning should be undertaken at once: certain periods are destitute of supplies.

Continuing, Mr. Blackburn criticises the management of co-operative canneries, and blames Government policy, and high price of raw fruit for many of the troubles of the industry.

The last season proved there was a market in Great Britain for all the canned fruit we could supply. The Canned Fruit Export Control Board was wrong in its sales policy last season. The fruit consuming season in England is opposite to that in Australia. Big buyers in the U.K. do forward buying in January and February. At least one million cases should be in processors' hands in January, and such must be a carry-over from previous operations.

In conclusion, — admitting the many difficulties facing the canned fruits industry, there should be no doubt about

? ? ? ? ? ? ? ? ?

QUERIES QUESTIONS DOUBTS

As to the Best Outlet for Your Fruit
can be dispelled by consigning it to

T. J. POUPART LTD.

COVENT GARDEN
LONDON, W.C.2.

SOUTHAMPTON BRISTOL LIVERPOOL HULL

Account Sales rendered are the best test of Salesmanship. On that test we have emerged from obscurity in 1895 to world-wide repute in 1934

Separate Department for Dried and Canned Produce and Pulp.

— AT —

SPITALFIELDS MARKET
London, E.1.

Tasmanian Growers ship through Eric Burgess Pty. Ltd., 88 Collins Street, Hobart.
Victorian Growers ship through Fred J. Andrew, 416 Little Collins Street, Melbourne.
New South Wales Growers ship through C. Geo. Kellaway & Son, Office 42, City Fruit Markets, Sydney.

its ultimate success. A select committee of enquiry, consisting of a keen businessman, the Under Treasurer, Mr. H. A. Pitt, and the Chairman of the Closer Settlement Board, Mr. C. McPherson, would fix this problem for all time. In any case, it would satisfy many growers whether it would be advisable to seek another outlet for their labors or remain in the industry.

SELLING FRUIT IN BRISBANE.

"Observant" writes:—Brisbane has been getting too many Apples, and growers have received less money than they deserved. Many years ago, when there were fewer agents handling the fruit, prices were better, and it stands to reason that the greater competition for the buyer must have an effect on the ultimate value of the fruit. In the olden days, when a limited number of agents were operating, there were, naturally, more buyers. To-day, a large number of people are importing who were once competitors.

Growers are urged by a Queensland correspondent not to send Apple varieties such as Londons, Reinnettes, Alexanders, Ribstones and Spitzenbergs to Brisbane, as these varieties are not wanted there. Jonathan remains the most popular Apple in Brisbane.

REPLY TO Mr. S. H. GORDON.

(To the Editor, "Fruit World.")

Sir,—

I have read the letter in your June issue, written by Mr. J. H. Gordon, of Leeton, and my first impression was that it was not worthy of a reply, but as my name is specifically mentioned in the letter, your readers may be expecting something from me.

Mr. Gordon commences his letter by the use of the term "self appointed leaders," subsequently he mentions three names, those of General Heane, the President of this Federation, Mr. J. A. Parkes, Secretary of the Federal Citrus Council, and the Writer. To suggest, Mr. Editor, that the three persons mentioned were "self appointed" is certainly too ridiculous to warrant the trouble of replying.

Mr. Gordon uses what may be taken to be an offensive term when he says: "We growers call it the fruitgrowers' cancer." Mr. Gordon was referring to the Plant Diseases Act of this State, yet only a few days prior to the publication of his letter the selfsame Mr. Gordon supported a resolution at a meeting in Leeton asking that the provisions of that Act be more rigidly enforced.

Mr. Gordon's whole letter is a mere critical statement made up as a result of a misunderstanding in regard to certain negotiations and there is not in the whole letter a constructive thought offered to the industry. At times like the present when all the organisations of growers should be active in endeavoring to improve the conditions of the industry by bringing to bear constructive ideas for discussion in order to secure some improvement, it is a pity that apparently irresponsible individuals rush into print with destructive criticism without first of all taking some trouble to enquire into facts.

Yours faithfully,

(Signed) E. E. HERROD,

Secretary, Fruitgrowers' Federation of N.S.W. (23/6/34).

Answers to Correspondents

Sulphuring of Grape Vines: "A.T.S.," Coominya, Queensland, writes:—Can you supply me with information regarding the sulphuring of Grape vines, the right periods to give applications? We lose heavily in wet seasons—the berries just seem to rot.

Answer (by Brisbane Dept. of Agriculture).—Your correspondent would like a definite schedule of applications, but, owing to the climatic vagaries of this State, no hard and fast rules can be laid down. In an average season, dusting when the shoots are 12 inches long, again when the vines are in flower, and at intervals of three weeks till the fruit is full size, will be satisfactory. The more experienced growers control powdery mildew successfully by the application of sulphur to the whole vineyard whenever there is any sign of the disease in any part of it. This is to be preferred to timing the applications by the calendar. From the tone of the enquiry, we wonder whether you have neglected your Bordeaux mixture sprays. We have available for free distribution to growers printed leaflets dealing with these subjects.

Bark Grafting Apple Trees: "Cleo.," South Australia, writes.—(1) I intend to bark graft a number of old Apple trees, the limbs being too large for strap grafting. Can you kindly let me know how to prevent destruction of the bark by polystictus? Would it be an advantage to cover all the bark for a few inches instead of only the wood exposed to the air? (2) Would you recommend bitumen or tar for painting old wounds on large limbs, or would these injure the bark, or prevent it from healing over the wound?

Answer (by F. Walker & Sons, Launceston, Tasmania).—(1) We find there is no trace of polystictus setting in if the trees are grafted by the porcupine system, and the wounds smeared with petroleum jelly. (2) We think petroleum jelly is better than either bitumen or tar for smearing over any wounds, but we think there is a very big risk of disease where big limbs are cut out of trees.

Answer (by Mr. P. Val. Kerr, Tyabb).—(1) I don't know how you can prevent polystictus in trees of which the limbs are too large for strap grafting. I would strongly recommend that the trees be either budded or grafted without heading back severely. I doubt whether covering the bark as well as the cut surface would be any insurance. (2) I have had no experience with tar, but bitumen, bitumen and linseed oil, and Colas have all proved satisfactory: the two former must be applied hot.

Ripening Tomatoes: "H.M.J.," Stanthorpe, Queensland, writes.—I wish to ripen green Tomatoes. Is anything done in this line down south, and how is it done, i.e., which is the best method? Would heat applied to a sealed room make a satisfactory job, or is gas necessary?

Answer (by Lightning Fruit Grader Co.).—We have ripened green Tomatoes with ethylene gas, but we think it best if you refer to the Queensland agents for ethylene gas, Messrs. Buzacott & Co., Brisbane.

Our method of ripening was to keep the heat at about 80 degrees F., and the humidity at about 80 degrees F. We keep both these temperatures just as high as we can without wilting the Tomatoes. An easy plan for the man on the land to bring up his humidity is to heat up a thick piece of iron in his forge, and dip it into a kerosene tin of water in the room, raising the humidity far higher than 80 degrees. It will be found that before the time for recharging the gas, the humidity will be lower than 80 degrees, but he will still get good results. Another way is to place wet bags in the room, as close as possible to the heating element.

Answer (by A. G. Strickland, M.Ag.Sc., Vic. Dept. of Agriculture).—Experiments have shown that green Tomatoes, which were in the early turning stage at the time they were picked, may be speedily and satisfactorily ripened at a temperature of 60 to 70 deg. Fahr. At lower temperatures—say, 55 deg., ripening still proceeds in a normal fashion, but is delayed. Lower still—in the region of 45 degrees—there is a distinct tendency for the Tomatoes to

break down rather than to ripen and color normally.

On the other hand, for rapid ripening, a temperature much higher than 70 degrees is not desirable, because of the possibility of rapid decay.

It is claimed that the period of ripening may be considerably reduced by using one part of ethylene gas per 4,000 parts of air in air-tight sweating rooms, or, if the room is not well constructed, one part of ethylene per 1,000 parts of air. The use of ethylene gas for ripening Tomatoes has not been adopted to any great extent in Victoria.

The temperature range which is recommended for ripening. i.e., 65-70 deg., is the same whether or not ethylene is used. When no ethylene is used, it is not necessary to have an air-tight room.

Pear Trees Not Cropping.—In reply to a South Australian grower on the subject of Pear trees not cropping, Mr. G. Quinn, South Australian Horticultural Instructor advised as follows:—

There may be several causes for non-cropping. If tree is young and very vigorous and blooms freely, it is possible excess of vigor interferes with the nature of blossoms. If it does not blossom, possibly rankness of growth operates against the formation of flower buds.

In such cases cincturing stem retards vitality temporarily, and often changes the character of buds, inducing formation of blossoms. Cincturing a Pear tree consists of cutting out a ring of bark right down into the sap-wood around trunk or limb. The strip taken out need only be one-eighth to one-quarter of an inch wide, but it must completely encircle stem or branch. It is done when tree is about in full bloom.

As there are varieties of Pears which do not set fruit freely unless other sorts of Pears growing nearby are blossoming at same time, so that bees and other insects may carry pollen to their flowers, this need for cross-pollination may be primary cause of Pear trees failing to set fruits. If this be the case, cincturing could not be relied upon to change character of sexual processes in floral organs.

S.A. DRIED FRUITS.

The McLaren Vale Fruit Packers' Ltd., McLaren Vale, S. Aust., write under date June 25, as follows:—The dried fruit season here is just about finished, the pack of Currants was about 900 tons, which is more than 100 tons more than the previous year.

Crop of Almonds was lighter than usual. Most of the nuts are now out of first holders' hands. Some Almond trees are starting to flower, but this will not be general for some weeks.

We have experienced a very dry autumn, and sub-soil rains will be needed to ensure any sort of a seasonable crop for next season.

AUSTRALIAN CRICKETERS IN ENGLAND.

Assist in Boosting Australian Produce.

When the Australian cricketers in England were offered the chance of boosting Australian Apples, Pears, and other produce by means of a "talkie" picture, it was found that their agreement with the Board of Control made this impossible.

However, the Director of Trade Publicity in England (Mr. A. E. Hyland) simply couldn't afford to let the opportunity go by default.

After exchanging cables between England and the Australian Board of Control, the matter was happily fixed, and Billy Woodful and his team gladly gave their assistance to boost Australian produce in England.

FIJI BANANAS.

Is Concession of 3/- to be Granted?

During May, Mr. F. M. Forde, M.H.R., urgently protested to the Federal Government against further concessions on Fijian Bananas. This was in consequence of a press report from Fiji to the effect that Fiji expected concessions to the extent of 3/- per case from the Commonwealth Government.

In the Orchard—and Elsewhere

"Ruston - Hornsby"

"PB" Oil Engines

are helping the men on the land to solve the problem of economical production. They are Simple, Reliable and Safe in operation and their Economy is a revelation

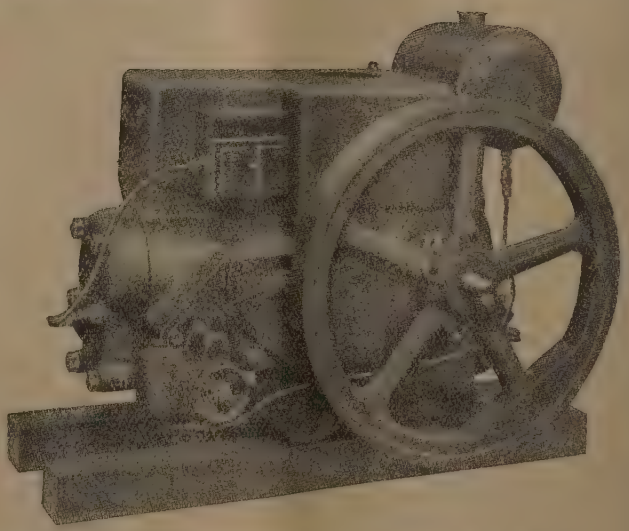
Hopper Cooled
Totally Enclosed
Forced Lubrication

MADE IN SIZES 1½ to 6½ BHP.

Tear out this page and post it with your name and address to any of our Branches, and full particulars will be sent to you, without obligation, by return mail.

Other R-H. Products include—

SPRAY TRUCKS, IRRIGATION SPRAY SYSTEMS, PUMPS, LIGHTING PLANTS, MOWERS, CHAFF-CUTTERS, SAW BENCHES, &c., &c.



Ruston & Hornsby (Australia) Pty. Ltd.

MELBOURNE: Cr. Bourke & King Sts.

SYDNEY: 642-44 Jones St.

BRISBANE: Barry Parade.

Cold Storage In Australasia

Power for Cool Stores.

STEAM :: CRUDE OIL :: ELECTRICITY

Electric Power Favored.

(A Paper read before the Orchardists' and Fruit Cool Stores' Conference, by J. H. Lang, Harcourt, Vic.)

IN SELECTING a power plant for a fruit cool store, the main considerations are efficiency, reliability and economy.

Efficiency. — It must be capable of supplying the necessary power.

Reliability. — It must not be liable to stoppage from any cause.

Economy. — Running costs must be low.

Four classes of power plants are available, viz., suction gas, steam, oil, and electricity. When cool stores were first built the majority used suction gas engines, but of recent years this class of power has gone out of fashion, which may be due, in some measure, to the activities of rival interests. It has proved itself efficient and reliable, and, in country districts, where a supply of cheap wood is available, with a wood producer, would probably be the cheapest. Under these conditions, power has been produced at a cost of 1/10th of a penny per h.p. hour.

Steam. — This power has never been largely used for cool stores. The chief disadvantage is the greater amount of labor necessary, and higher running cost. With firewood at 9/- per ton, fuel costs would be 2/5ths of a penny per h.p. hour.

Crude Oil.—This power is being largely availed of at the present time, and seems to be giving general satisfaction. More lubricating oil is required by this class of engine than others mentioned, but this cost can be considerably reduced by installing a suitable oil purifier. During the last year the running costs (including lubricating oils) of five stores were from ¼ to 1/5th of a penny per h.p. hour.

Electricity.—The latest competitor for power in the cool stores is electricity, and sufficient data is now available for a fair comparison with other power plants. Last years' costs on five stores being 2/5ths to 1 penny per h.p. hour.

In comparing these costs with those of other powers, allowance must be made for the greater efficiency of electric motors giving as they do their full-rated power without variation, therefore the installed h.p. can be reduced up to about 30 per cent.

At Harcourt at the present time, 102 h.p. electric motors are doing the work formerly requiring 150 b.h.p. in crude oil, and 150 h.p. with a high volocity steam engine.

Electric motors also give unit control in a greater degree than other powers. The number of belts and pulleys necessary where power is derived from one unit absorb and appreciable amount of power, besides adding to installation costs. The main advantage derived from unit control, however, in stores under the air circulation system, is the ability to work each unit separately. While the compressors are running, a reserve of cold air is obtained in the coil room, this can be circulated by means of the fans after the compressors have stopped.

Under a two-part tariff, cheap power may be used during the night running for the compressors, the fans being relied on for at least a portion of the day. The Electricity Commission encourages unit control by allowing a discount of 20 per cent. on service charges where six or more motors are installed.

An interesting comparison of crude oil and electricity can be made by comparing the figures of Ringwood and Harcourt for last year.

Ringwood.

Capacity	50,223
Power	Crude Oil
H.P. Installed	120
Cases per h.p.	418
Hours run	2,493
Cost installed, h.p. hour	.19
Cost 100 cases	9/5

Harcourt.

Capacity	80,000
Power	Electricty
H.P. Installed	102
Cases per h.p.	800
Hours run	2,491
Cost installed h.p. hour	.4
Cost 100 cases	10/7

In installing large plants, the duplication of power and refrigerating units should be seriously considered, two smaller ones taking the place of one large, so that in the event of a breakdown to one, the other by running longer hours could cope with the work.

Regarding compressors, a 30 and a 20-ton machine will be found to give more economical service than one of 50 tons. As the installation costs of electric motors are about 50 per cent. of other powers an increase in running costs may be compensated for by reduced interest on capital costs, also lower depreciation.

The full amount of refrigeration would probably be required when the store is being filled during the hot weather while one of the smaller machines would be able to hold temperatures during the colder months when the store is full.

The most potent factor for success or otherwise in cool storage as in any other

Delegates and Visitors at the recent Conference of the Orchardists' and Cool Stores' Association of Victoria.

Ringwood Cool Stores — Capacity, 50,223 Cases.

business, is the human element. Supervision by the management and care and attention by the engineer will go far to ensure efficient and economical running.

Crude Oil.
Cases per h.p.
Six Stores.

Bunyip	300
Tynong	350
Elinora	475
Heatherlea	500
Pakenham	415
Ringwood	418

Average—414.
Total h.p., 235. Capacity, 97,342.

Electricity.
Cases per h.p.
Five Stores.

Burwood East	457
Harcourt	784
Mt. Waverley	760
Somerville	630
Wantirna	750

Average—681.
Total h.p., 296. Capacity, 201,548.

H.P. Hours per Case Capacity.

Crude Oil.

H.P.			Cases.
20	Bunyip	5.75	6,000
20	Tynong	3.34	7,000
21	Elinora	3.198	10,000
20	Heatherlea	3.4	10,000
34	Pakenham	3.92	14,119
120	Ringwood	5.95	50,223

486,236 h.p. hours, average 5 per case.

Electricity.

H.P.			Cases.
70	Burwood E.	4	32,000
102	Harcourt	3.469 4.63*	80,000
37½	Mt. Waverley	3	28,500
35	Somerville	3.384	22,048
52	Wantirna	3.075	39,000

659,084 h.p. Hours average 3.27 per case.

*This includes runs on steam as well.

Find your purpose and fling your life out to it; and the loftier your purpose is, the more sure you will be to make the world richer with every enrichment to yourself.—Philips Brooks.

Commercial News

Brookes Lemos Ltd.

At the second annual meeting of Brooke's Lemos Ltd., the chairman (Mr. H. K. Brooke) directed attention to the improvement shown in the business over the last financial year, in spite of the unexpected developments in the American canned fruits industry, which placed all export markets in a state of chaos, and caused prices to collapse.

Through circumstances beyond the control of the directors last year's pack was not sold until after the dollar exchange and the prices for canned fruits had slumped. The selling of canned fruit in Great Britain was still determined by the Australian Canned Fruits Control Board. As a result of the Ottawa Conference, Australian canners received a 15 per cent. ad valorem preference in the Customs tariff of Great Britain, and as the dollar exchange was at 3.45 dollars to the £1 sterling, the Fruit Industry Sugar Concession Committee, which controlled all sugar rebates given to manufacturers on exports, determined that £12 should be paid to the growers by the canners for canning Peaches, Pears, and Apricots. With the depreciation of the American dollar the assistance of the protective duty was reduced, and only small sales were recorded after May and June of last year, stocks accumulated in Australia, extensive price cutting followed, and considerable losses to canners resulted. This year a smaller quantity of fruit had been processed, and it had already been sold for export. Before the end of April, 900,000 cases of fruit had been sold by Australian canners, which was almost twice the amount sold last year.

The quality of the pack was appreciated by buyers, and the company had received equal third prize for Pears at the Bristol Exhibition.

CHANGE OF NAME.

"M. S. REGAL LTD.," Sydney, have decided to change their name to "REGA PRODUCTS LTD."

QUEENSLAND

QUEENSLAND'S FACTORY CITRUS PRICES ANNOUNCED.

The Committee of Direction of Fruit Marketing announces that prices of factory Citrus for the coming season will be the same as last year, namely:—

Citrus—£16 per ton.

Seville Oranges.—1st grade, £8 per ton; 2nd grade, £6 per ton; 3rd grade, £4 per ton.

Lisbon Lemons. — 1st grade, £10 per ton; 2nd grade, £8 per ton; 3rd grade, £5 per ton.

Bush Lemons.—1st grade, £6; 2nd grade, £4 per ton.

Grapefruit.—£8 per ton.

Sweet Oranges.—£6 per ton.

Control of Factory Pineapples.—During May the Committee of Direction of Fruit Marketing, Brisbane, issued a direction, bringing factory Pineapples under control until May, 1934. No Pineapples can be sold to any fruit canner, jam manufacturer, or pure processor, except by C.O.D.

Banana Limitation Opposed. — The Mooloolah Fruitgrowers' Co-operative Association, Queensland, recently protested against the published statements favoring the limitation of Banana planting the next two years.

Fruit TreeS
Fruit TreeS
Fruit TreeS

Best Obtainable—Catalogue Free

John Brunning and Sons
Somerville Nurseries,
Somerville — Victoria Australia.

Orchards & Nurseries 208 Acres.
Private Cool Stores, 17,500 Case Capacity.
Established 1866.

A Review of 1934.

Pear and Plum Export.

VERY INTERESTING DETAILS regarding the export of Pears and Plums from Victoria are to hand from Mr. J. M. Ward, Supt. of Horticulture, who writes as follows:—

Dear Sir,—

By direction of the Hon. the Minister of Agriculture, I am forwarding herein extracts from the report of the Trade Commissioner attached to the Office of the Agent-General for Victoria, London, in respect of the shipment of Pears and Plums ex. s.s. "Mongolia," which sailed from Melbourne on January 30 last.

This vessel arrived on March 9, and started to discharge her 8,338 cases of Victorian Pears and 620 cases Victorian Plums at Tilbury Dock at 3 p.m. Trains were waiting to receive this fruit, and it was immediately put into trucks, and some lots were sold the next morning (Saturday) at Covent Garden. Men were working throughout the night so as to get the whole consignment unloaded by the morning.

The fruit was carried at satisfactory temperatures.

We took the temperature at core of eight cases of Pears on discharge, and they were as follows:—Five cases 34 degrees, 1 case 33 deg., 2 cases 35 deg.

Generally, the Pears were in very fine condition; in fact, the best Williams we have ever seen shipped from Melbourne. Owing to the low temperature, some of the Plums had got frosted. The temperature of the Plums on discharge was 32 degrees.

The dunnage used was as described in advice note from the Department of Agriculture. There were two special cargo rooms on the boat, and one carried Pears and the other Plums, and the door of each chamber was kept open, so that these two chambers were practically the same temperature as the No. 5 'tween deck.

You will notice in the temperatures given that there is a difference of a few degrees on discharge. This is owing to the temperature of the holds being allowed to rise slowly on the morning of March 9. I have only given the temperatures up to March 8th, and this will account for the rise which prevented the sweating of the Pears on discharge.

Messrs. White and McColl examined the following fruit at Tilbury Docks:—

CITRUS TREES

Trees grown from buds supplied by Co-operative Bud Selection Society, N.S.W., £4/10/- per 100. Washington Navels and Late Valencias only. All other varieties at £4 per 100.

A. T. EYLES, The leading Citrus Grower, Fairmount Nurseries, Rydalmere, N.S.W. - Phone UW 9037.

Pears.

	Count.	Comments.
Mona Valley	417 144	core temp. 35 deg. Sound, but beginning to yellow and soften.
" "	" 168	core temp. 34 deg. Fully green—a nice clean lot.
" "	" 144	core temp. 35 deg. A variable lot—some fruit hard and green, others beginning to yellow and soften.
Mona Valley	168	core temp. 34 deg. Fully green — well developed, and with nice clean skins.
" "	106	core temp. 33 deg. Very fine pack. Well matured, showing slightly yellow skin.
M. G. Wright	192	core temp. 34 deg. Green—clean skins, but small and immature, tending to shrivel.
M. Hanlon	168	core temp. 34 deg. Firm and green, some Pears immature.

The market for Pears is slow, there being very large quantities of South African and Argentine Pears, and I believe prices would have been much better a week later, when these would havebeen cleared off.

I beg to confirm the following cablegram sent you on March 12th—

"Agriculture — 'Mongolia' Wiliam Pears arrived in good condition, realising up to 13/-. Plums, some frosty, realising 7/- to 11/- per half case."

Quite a large quantity of the Pears and Plums were examined both at the the ship's side and at the various warehouses, and everybody was pleased with the very fine condition of the Pears.

Messrs. White and McColl examined the following fruit at Covent Garden on March 10th—

Pears.

Dennis, Cooper & Co.—		
M. Hanlon	144 count	Nice bloom, color—greenish yellow.
H. Wheatley	168 count	Nice bloom, color—greenish yellow.
	192 count	Color—deep green. All in sound condition, with clean skins.
Mona Valley	144 count	Color—greenish yellow.
	168 count	" yellow green.
	192 count	" deep green.
A. W. Fairless	144 count	Green, but commencing to color.
	168 count	All counts showed evenness in color.
	192 count	All counts showed evenness in color.
Dan Wuille & Co.—		
Mona Valley	168 count	Deep green. All in sound condition, showing clean skins, and fresh appearance.
	168 count	Deep green. All in sound condition, showing clean skins, and fresh appearance.
	168 count	Beginning to show yellow. All in sound condition, showing clean skins and fresh appearance.
McDonald Bros.	144 count	All deep green—fine condition.
	168 count	All deep green—fine condition.
	192 count	All deep green—fine condition.

Plums.

Dan Wuille & Co.—

	Variety.	
S.J.P. H. Denham (Tyabb) L.	Satsuma	Fine large Plums, good even color, firm, and flavour excellent.
" F. G. Gregory (Tyabb)	Worrowee	Good condition, but beginning to soften. Each Plum wrapped. A few beginning to shrivel.
" T. G. Denham	P.B.	All wrapped—splendid condition.

A second case examined from this grower comprised larger Plums, which, although still quite sound, were beginning to soften.

436 J. Tully, Doncaster, Satsuma (unwrapped). This case appeared to be the culls from better fruit grown by this grower. The case contained mixed sizes of large and very small Plums; the smaller fruit was quite firm, whilst the larger was quite soft. The fruit was unwrapped, and was, considering the better class fruit forwarded by this grower, a very unattractive lot.

Plums.

Dennis Cooper & Co.—

I have just heard (March 14) that several lines of Plums sold by this firm have been the cause of complaint, owing to the flesh of the Plums turning brown. Some of the cases have been returned, and in other instances rebates have been asked for.

GOODMAN'S

FRUIT TREES

LINES RECOMMENDED FOR

1934 Planting

APPLES

CLEOPATRA
DELICIOUS
DUNNS
GRANNY SMITH
ROME BEAUTY
and Others.

EXPORT PEARS

BOSC
COMICE
WINTER COLE
WINTER NELIS
and Others.

CHERRIES

All Leading Kinds.
DARK ENGLISH PLUMS
NECTARINES
CANNING APRICOTS
NUT TREES — ALL SORTS.

Goodman's Trees are clean, healthy, well-grown, fibrous rooted, true to name and give the best possible results wherever planted. Order now!

Reliable Trees packed by experts and promptly despatched to any address.

Centenary Fruit Tree Catalogue post free on request. Write for one.

C.J.GOODMAN
Picnic Point Nurseries
Bairnsdale - Victoria
W-M&F.

Pears.

Examined on March 11th—

Consigned to Hewlins, Milburn & Co., and sold by M. & W. Mack. E.R.

M. Shepparton Pack . . No. 10 count 144 Firm condition, green, but showing slight yellow tinge, good bloom, clean skins.

" " " . . No. 11 count 144 Firm condition, green, but showing slight yellow tinge, good bloom, clean skins.

" " " . . No. 5 count 144 Firm condition, green, but showing slight yellow tinge, good bloom, clean skins.

Examined on March 13—

S. M. Machado & Co.—

Grower—Spivey & Son. 144 count. This case showed superficial bruising, and as the Pears ripened detracted greatly to the appearance of the fruit, otherwise it was quite good.

Dan Wuille & Co.—

Grower—A. W. Fairless, 106 count. On cutting open a Pear, I found Codlin Moth. This, no doubt, caused early breakdown. Severe scald in some fruits, also very bad bruising. Another case of the same count from the same grower was in excellent condition.

Geo. Monro & Co. Esmond Russell & Co.—

Several cases were examined from various growers at this warehouse, and all were found to be in hard, sound and excellent condition.

With respect to ripening tests, six cases were selected, as requested. A separate report will be submitted when the results have been finalised.

March 15th, 1934.—

On visiting Covent Garden this morning, my attention was drawn to the wasty condition of three cases of Mona Valley Pears, at Messrs. Dan Wuille & Co's. warehouse, and to five cases at Messrs. Dennis Cooper & Co's. stand. I found that acute scald had developed, and in many cases the Pears had quite collapsed. I take it that these were in a too forward condition when shipped. In one or two of the cases I found two or three fully yellow but sound Pears amongst the wasty fruit. I also found, on cutting open one of the Pears, that it had started to go bad, that the flesh was in a fully ripe condition, and the only conclusion I can come to is that these few cases were shipped in too mature a condition.

Temperatures at Which the Fruit Was Carried:—

No. 5 'Tween Deck.

	Degrees.							
Leaving Melbourne	37	35	34	38	35	35	37	
Adelaide	35	32	32	34	32	32	33	
Fremantle	33	31	31	32	30	31	31	31
Colombo	31	30	30	30	30	30	30	30
Bombay	31	30	30	30	30	31	30	30
Port Soudan	31	30	30	30	30	30	30	30
Port Said	31	30	30	30	30	30	30	30
Marseilles	30	29	29	30	29	30	30	29
Approaching London, March 8	30	30	30	30	29	30	30	29

Apple and Pear Export.

Empire Producers' Conference.

Activity of Australian Delegate.

SO FAR, cabled reports of the Empire Producers' Conference, in London, have been brief.

In opening the conference, Sir Edward Davson, pointed out that only 41 per cent. of the fruit Britain imported came from the Empire. Besides an increase in the share of the British market, the conference would discuss every aspect of marketing.

On the suggestion of Sir Eccles Snowden, the discussion was limited to Apples and Pears.

Mr. G. W. Brown said Australia did not favor quantitative restriction, which was a policy of despair. He advocated qualitative restriction of varieties of grades, to enable the most suitable fruits to be placed on the market at the right time. Australia already had reduced the varieties from 106 to 46.

Mr. J. A. Campbell (New Zealand) supported the suggestion.

Sir William Lobjoit emphasised the avoidance of overlapping, to prevent the new fruit of one country clashing with the old fruit of another.

New South Wales News and Notes

Murrumbidgee Fruitgrowers

★ Standard Case (18 x 11½ x 10½) Approved for Local and Export Trade :: Elimination of Low-Grade Fruit Desired :: Federal Citrus Council Criticised : Fresh Fruit Control Opposed

THE ANNUAL CONFERENCE of the Irrigation Areas' district branch of the Fruitgrowers' Federation of N.S.W. was held at Leeton at the end of May. Mr. J. E. Ward was elected chairman.

In addition to local delegates, there were also present Messrs. E. E. Herrod, General Secretary of the Federation; L. T. Pearse, Markets' Representative; G. W. Beverley, Instructor, Department of Agriculture.

Resolutions were carried, requesting a renewal of the subsidy of 15/- per ton on fertilisers: for an enquiry into the import duty imposed on sulphate of ammonia: that an inquiry be made into the exorbitant prices demanded by Australian manufacturers and merchants for spare parts of agricultural implements, engines and tractors, also into the import duty imposed on spare parts.

That in order to prevent theft of fruit and to encourage genuine hawking, all hawkers should be registered. It was stated that Oranges had been stolen by the lorry-load, and that unregistered hawkers were responsible for bringing back diseases into the area.

That instructions be issued to secure a uniform method of marking cases of fruit sent to the city markets. Mr. Inman stated that some coastal growers were using cases that originally belonged to Leeton growers.

Low-Grade Fruit.—Mr. Connor, Griffith, moved that the Department of Agriculture be requested to enforce the grading and packing regulations, with the object of eliminating the low-grade fruit, which constantly depreciates the market values, and tends to lessen the popularity of Citrus fruits with consumers. Mr. Inman said that lower grade was not necessarily small-sized fruit. Most of the really low-grade fruit came from small orchards close to the city.

Fruit in Bags. — Mr. Connor moved that bags be prohibited as containers for the marketing of Citrus fruits. There was a vigorous discussion, in which it was pointed out that country trade had been developed through fruit in bags, and, on the motion of Mr. Enticknap, seconded by Mr. Brewer (Yenda), it was decided to request the prohibition of bags as containers for the marketing of Citrus fruits on city markets.

Fresh Fruit Control.—Mr. V. C. Williams, Griffith, moved that this meeting of fruitgrowers is opposed to the statutory control of fresh fruit. Mr. Enticknap said that Leeton was unanimously opposed to any control regarding Citrus fruits; other growers spoke similarly. The motion was carried.

Federal Citrus Council.—The constitution of the Federal Citrus Council came in for considerable adverse comments. The chairman said he did not think there was any proper Federal Citrus Council, it was just a matter of the tail wagging the dog. Mr. V. C. Williams said the Federation should send a delegate to the Federal Citrus Council. The only M.I.A. representation was from the Griffith producers. Mr. Enticknap said that the N.S.W. representation on the Federal Citrus Council was nominally one delegate from the Federation, and one from the Griffith producers. This was quite inadequate. The Citrus Council had brought forward a control measure without authority from the growers of N.S.W. It was decided to seek representation on the Citrus Council on a production basis.

Standard Export Case.—It was decided to recommend that the standard bushel case (18 x 11½ x 10½) be adopted for both export and Australian trade, in opposition to the adoption of the Australian Dump case.

Decided to support a reduction of agents in the Sydney market, and the formation of a growers' distributive organisation.

Recommended that a prize of £25 be given for the most effective method of Codlin moth control without arsenate of lead sprays.

That a protest be entered against the Fruitgrowers' Federation in granting £100 to pay for the collection and canvassing of votes in the recent dried fruit poll.

A hearty vote of thanks was carried to Mr. Inman, Leeton, and Mr. V. C. Williams, Griffith, who represented the area on the Federation during the past twelve months.

Fruit and Produce by Rail

Railways Offer Special Reductions for Monopoly.

IN AN ENDEAVOR to regain trade which has been taken away, the Railways Department of N.S.W. has made a specially reduced offer to producers, provided all their produce is sent by rail.

This offer was made at a conference held at Windsor, between Hawkesbury produce growers and representatives of the Railway Department.

Mr. Edwards, of the Chief Traffic Manager's Office, said the department was willing to charge only 2d. per case freight on fruit between Windsor and Darling Harbor. This worked out at the rate of 6/8 a ton, taking 40 cases to the ton; vegetables for 6/8 a ton (in addition to providing the necessary crates); eggs, 3d. per 18 dozen cases. These rates would be granted only if a sufficient number of growers signed the necessary undertaking. **The agreement would remain in force for one year, during which time the consignor must send, without reservation, the whole of his goods by rail.**

Growers expressed the opinion that the charge of 2d. a case would meet with approval, and action is being taken to get the scheme going.

The N.S.W. Railway Department has offered big concessions to producers who sign an agreement to send all the produce by rail: the agreement to remain in force for a year.

N.S.W. RAILWAYS ASSISTS GROWERS.

During the past four years the N.S.W. Railways Dept. has paid £62,000 to Orange growers, and £70,000 to growers of other fruits.

NEW RAILWAY REGULATIONS.

It has been decided by the N.S.W. Railway Department to make a small charge for the carriage of empty cases and timber intended for making cases and crates. The rate will be the same as that applicable to fertilisers.

Previously these articles were carried free of charge, and the commodities

Fruit
Brokers and Auctioneers
"FRUCHTHOF"
Hamburg Germany

Consignments of Apples and Pears Solicited

Ph. Astheimer & Sohn
Cable Address: Agrumi

Gustav Bey
Cable Address: Gusabey

Int. Frucht-Imp Ges.
m. b. H.
Cable Address: Frugalis

J. H. Lutten & Sohn
Cable Address: Luttenson

Aug. Stier
Cable Address: Frutéro

Timm & Gerstenkorn
Cable Address: Timmkorn

Firms Listed in Alphabetical Order.

The **"Fruchthof"** (Fruit Exchange) **Hamburg,** Germany
Offices and Salerooms of the Six Leading Fruit Brokers of Hamburg
No Other Brokers and Auctioneers Selling in the "Fruchthof"

HAMBURG
The Biggest Port on the European Continent

For Information apply to anyone of the above mentioned six firms

subsequently packed in the cases were carried at very low rates.

The amended rates and conditions came into operation on May 30.

PRUNES IN N.S.W.

New South Wales is by far the largest dried Prunes producing State of the Commonwealth.

The Prune Packers' Association of N.S.W. represents about 95 per cent. of the growers and packers of dried Prunes in N.S.W., and works in unison with similar associations in the other dried Prune producing States, and also in harmony with the State Dried Fruits Boards.

The chairman is Major the Hon. Thomas Steele, M.L.C., and the secretary, Mr. W. H. Toothill.

For the year ended December 31 last, the association and its members controlled 1,646 tons of the N.S.W. production, and exported 615 tons or 37.36 per cent., to overseas markets, principally New Zealand, Canada and the United Kingdom.

£15,000 FIRE DAMAGE AT GOSFORD.

Citrus Packing House Burned Down.

The Gosford Co-operative Citrus Packing House Ltd. was destroyed by fire on June 4. The fire, which began in the boiler-room, at 1.15 a.m., was still burning at 10 a.m.

Two hundred and fifty thousand Oranges, including four truck loads, part of a consignment for London, produce fertilisers, and fruit grading machines, were destroyed, the damage being estimated at £15,000. The books and papers in the office were the only things saved, as there was no local water supply.

About 80 employees and pickers will be temporarily unemployed as a result of this fire.

ORANGE.

(From Our Correspondent.)

PRUNING is the order of the day in the orchards at present, the continued dry spell, with warm days, making conditions ideal for this purpose. The dry weather is also an advantage, in that it permits a lot of resoiling to be carried out, which has become a general practice throughout the district; the results are surprising, even when only poor row soil is applied.

The Apple crops turned out better than at first anticipated. Most of the younger, more vigorous trees carried good crops, while the old trees were light. This applied more particularly to Granny Smiths. There is a large quantity of these latter held in cool store at present, for a late market in anticipation of a good rise in price.

The indications for next season's crop are good, with the exception of Plums. These will be on the light side, which is an advantage, considering the huge quantity produced.

Coomealla. — The monthly meeting of the Coomealla Fruit Growers, which was held on June 12, was presided over by Mr. John Cook.

Mr. O'Donnell outlined the recent activities of the N.S.W. Dried Fruits Board, and said that the maintenance of sales was due to the advertising programme.

Mr. O'Donnell stated in reply to a question that so far as he could find out, in Sydney, the Rural Bank was not going to take over the settlers' debts, irrespective of whether they were indebted to the Commission or the Rural Bank.

EARLY BUDS WORRY ORCHARDISTS.

Many orchardists in the Liverpool (N.S.W.) district are worried by the premature budding of fruit trees, due to the recent rains.

A frost would kill these buds, but it would also benefit many growers, by preventing the further premature appearance of buds.

BULL IN ORCHARD.

Lawsuit Fails on Matter of Identity.

Before Mr. Hardwick, S.M., at the Windsor (N.S.W.) Court of Petty Sessions, on June 19, B. Greenfield claimed £50 damages from Ebenezer Johnston. Greenfield claimed that a red bull and a bullock branded E.J. had destroyed two acres of young Passion vines, which would have borne in October, and that he was prevented from impounding them, as the animals got away.

The magistrate granted a non-suit, and pointed out that because a beast bears a certain brand that does not prove ownership, as a sale could have been effected.

FILLS A LONG-FELT WANT.

(To the Editor, "Fruit World.")

Dear Sir,—Enclosed please find cheque for £1, for three years' subscription, and 6d. exchange.

The "Fruit World," I consider to fill a much-needed want amongst orchardists,—especially as to forecasts of crops and conditions throughout fruit-growing areas. The season drawing to a close has been fairly profitable to orchardists in this district, as our crops were above the average, and the fruit clean and free from disease, and of good, even size and quality, and the heat wave did not affect us, so, taking things all round, we had a fairly profitable year.

Wishing your paper every success,

(Signed) W. H. COLLINS.

Dried Fruits News and Notes.

DRIED FRUIT EXPORTS.

The Department of Commerce recently announced that the value in Australian Currency of exports of dried fruits for the first ten months of the financial year totalled £1,949,000, which shows an approximate increase of £460,000 over the value for the previous year.

Details of shipments from July 1, 1933, to April 30, 1934, with comparative figures for the same period last financial year are:—

	July 1 to April 30. 1933-34.	1932-33.
	£	£
Raisins	1,397,052	1,147,417
Currants	440,413	309,151
Other dried fruits	111,520	33,323
	1,948,985	1,489,891

At Mildura, the yield of dried fruits is about 30 per cent. smaller than that of last year.

About 40,000 tons have been delivered to the packing-sheds. Because of the rain before the harvest much of the fruit was split, and reprocessing was necessary.

The Mildura Horticultural Society will stage a Dried Fruits Week in Mildura with the co-operation of the Victorian Dried Fruits Board, from July 18 to 23. The Victorian Dried Fruits Board will supply the advertising matter.

Dried Fruit as Biscuit Filler. — The Mildura Co-operative Fruit Co. has prepared a dried fruit mixture for use as a biscuit filler. Already over ten tons of the fruit mixture which is comprised of minced dried fruits combined with Apricots, Pears and Peaches, have been disposed of.

Mildura Dried Fruits Show. — The chairman of the Victorian Dried Fruits Board, Mr. Balfour, will present the trophies at the Mildura Dried Fruit Show on July 21. Donations of £2/2/- from C. H. Tutton Pty. Ltd., and £1/1/- from Mr. J. A. Dundas, have been received by the Society.

AUSTRALIAN DRIED FRUITS.

Sales in Great Britain.

The Commonwealth Dried Fruits Export Control Board reports that the sales of Australian dried fruits in Great Britain for the week ending June 21 amounted to 667 tons. Of the new season's Sultanas, 143 tons were sold at an average of £47/1/8 per ton, making the total sales to date 260 tons; 150 tons of 1933 Sultanas averaged £33/5/- per ton.

The market for new season's Currants continues active, and 362 tons were disposed of at an average price of £41/10/- per ton.

FLOWERS FOR PROFIT

Gladioli Suggested for Northern Victoria.

(To the Editor, "Fruit World and Market Grower.")

Sir,—You ask me, if I were anxious to start the work of growing flowers, a few questions.

1. Where do you consider the best place to grow flowers?

2. What position would you look for, and class of soil?

3. What do you consider the most suitable flowers to grow for market?

4. What would be the likely result from one's labor?

In answer to these questions. Many points must be considered, first, it is a well-known fact that at times the Melbourne flower market is very much over-supplied,—I say, at times. It must be borne in mind that most of our flower growers are located within a radius of approximately 30 miles of Melbourne, therefore, to grow flowers for profit one must look for a district that will grow flowers at a season different to Melbourne. I would certainly look for a district where flowers could be raised from one to two months earlier than Melbourne, and this should be possible in the northern districts of our State, a sheltered, sunny spot, well drained, and fairly good soil, with a plentiful supply of water easily obtained.

I consider a grower should be a specialist in some particular line, and this does not debar one from growing other flowers or carrying on other classes of work.

Gladioli I consider to be the best main line to follow, for many reasons,—they are easily grown, very hardy, nice to handle, carry well, and good lasting quality, and well-grown flowers always find a market and will always sell, whilst inferior classes are at times unsaleable.

To enable one to find out results, it would depend on his labor, and to give an inexperienced grower some idea of culture and space required, we take a land ready for planting, say, four feet wide by 300 feet long. This would carry not less than 1,000 bulbs; these should provide approximately 2,000 blooms. Earliest blooms are worth from twopence to threepence each, or a return from the patch mentioned of £25. As a grower becomes experienced, he may see his way to increase this amount, the figures quoted are actual, and possibly some of your readers may become interested in what can be made a most profitable hobby.

Bulbs can be purchased as low as £5 per 1,000 for good varieties, and, possibly, inferior sorts for less.

If one starts on right lines and sticks to his job, failure is out of the question.

Should any of your readers who are located in favorable districts desire further information, details can be supplied on writing to the Editor.—

A LOVER OF FLOWERS.

YELLOWS IN PEACHES.

According to an American report, the Boyce Thompson Institute for Plant Research, at Yonkers, U.S.A., has announced that a small, wingless leaf hopper has been definitely convicted as the cause of the destructive disease in Peaches known as "yellows."

The Hopper is less than ⅛th inch in length, and feeds on the sap of the young twigs, injecting virus into the tissues during the process.

A Popular and Inexpensive

Direct Coupled Power Sprayer

FIG. 322 S—

"Buzacott" Direct Coupled Power Sprayer

Assembled on channel steel base, this is a very convenient and powerful outfit which can be loaded easily and quickly on a farm waggon or transport if desired. When Engine is not required for Spraying, it can be removed by unscrewing six nuts, connected to windmill in a few minutes and set to work pumping, or utilised for other work about the orchard and farm

The Pump is fitted with Pressure Gauge Relief Valve, Suction Hose and Strainer, and will operate two Orchard Outfits equipped with the popular "Rosebery" Nozzles.

POST FOR CATALOGUE AND FULL PARTICULARS

MR. .....

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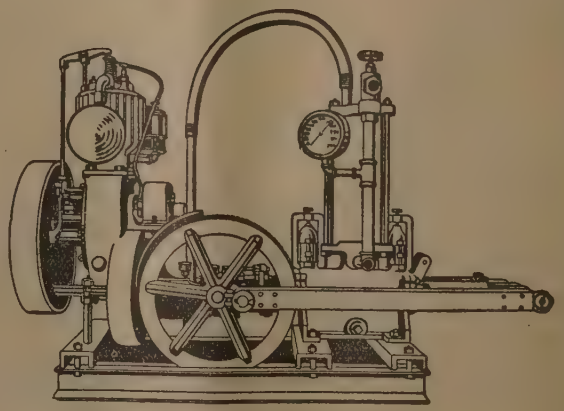


Fig. 322 S.

CAMERON, SUTHERLAND & SEWARD Pty. Ltd. RIVERSIDE AVENUE, SOUTH MELBOURNE

Brown Rot Control

Importance of Orchard Hygiene

Recommended Spray Programme

(By S. Fish, M.Ag.Sc., Victorian Government Plant Pathologist.)

IMPORTANT INFORMATION regarding the control of brown rot was given by Mr. S. Fish, M.Ag.Sc., Victorian Government Plant Pathologist, at several lectures in the Goulburn Valley recently.

Mr. Fish urges the tremendous importance of destroying the mummified fruit before applying dormant sprays.

The severe blossom blight of the spring of 1932 was largely caused by diseased fruits remaining on the tree over the 1931-32 season.

At picking time in the 1932-33 season, the fruit was heavily infected with Brown Rot, particularly Apricots, and it was impossible to market fresh fruit profitably. Goulburn Valley growers would have been £20,000 in profit if they had not sent a case of fruit to Sydney that year.

During the 1932-33 season Brown Rot attacked a number of canning varieties, such as Golden Queen, and Pullar's Cling, and, in some instances, growers' losses were 30 per cent.

Since 1926 the Department of Agriculture had been working on this subject, and, after four years' tests in the Goulburn Valley, the work was transferred to Doncaster, and, during three years, promising results had been secured. They had definitely shown that it is extremely important (1) to remove all dried diseased fruits ("mummies") from the tree before applying any dormant sprays, and (2) to destroy all mummies and prunings (infected wood) on the surface of the soil before the application of any dormant spray. If, after raking up the prunings and burning them, the mummies and small prunings are ploughed in, it would effectively prevent them from producing spores for the spring. This meant that the only other means that the fungus had of carrying over to the spring was by means of a few infected twigs, which must necessarily be missed in pruning a tree.

The work had shown that Bordeaux and lime sulphur were not effective in preventing such twigs from carrying over the fungus in the spring, although they reduced it to some extent.

A promising material,

which prevented this sporulation from the infected twigs, had been found (solum orthodinitrocresol), and experiments had shown that that material would reduce the blossom blight to a minimum. It had also been shown that a low percentage of infected blossoms meant a low percentage of fruit infection. This material was being developed as a possible dormant spray for these fruits. It was also toxic to aphis eggs; hence it had possibilities of being a dual or utility dormant spray for stone fruits.

BROWN ROT AND ORCHARD HYGIENE.

The necessity for destroying the mummy fruits now is urged most strongly by Mr. S. Fish, M.AgSc., of the Plant Research Laboratory, Burnley, who has given special study to Brown Rot and fungus diseases.

Unless growers destroy these mummies now they may as well spray with water later, adds Mr. Fish.

At Mr. Pickworth's orchard, at Ardmona, this spray was being used, where 52 different spraying schedules were tested for Brown Rot control last year. All mummies were removed from the trees before dormant sprays were applied, **but the mummies left on the ground were a prolific source of spore production the following spring, and thus defeated the objects of the dormant sprays.**

The infected blossoms produced, periodically throughout the season, crop after crop of spores, and when the

Oriental Peach Moth

injury occured there were sufficient spores to infect a large percentage of the injured Peaches. Fruit (Golden Queen Peaches), after various treatments, were held at the cannery for three days, and there was no significant difference in the percentage of Brown Rot. An average of about 30 per cent. of infected fruit was counted at the cannery. The result was expected, due to the terrific concentration of spores at the orchard.

Speaking of the investigations made into the development of

Brown Rot in Peaches

sent to Sydney market, Mr. Fish stated that the investigation had shown—

1.—That Brown Rot will develop in injured Peaches during pre-cooling and ice trucking in Sydney.

2.—That sound Peaches coming from an orchard where there is a heavy Brown Rot infection, readily develop Brown Rot in Sydney when the fruit reaches the temperatures of the Sydney market, although it is sound on arrival. The agent and buyer want the fruit to remain sound for five days from arrival in Sydney to permit it to be handled and eaten. They say that if it deteriorates before that time it limits distribution. Experiments conducted at the Sydney market have shown that under the temperature and moisture conditions at which the fruit is held at agents' stands, Peaches with a heavy spore load on their skins develop Brown Rot before the five-day period is up.

Thus **the problem comes back to a question of an effective orchard control of the disease.**

Control Measures.

Realising that though the experimental investigation into the control of Brown Rot has not yet been completed, Mr. Fish summarised the tentative measures that would be of some value in helping growers this season. They are as follows:—

1.—**Take every single mummified fruit off the trees before applying any dormant spray.**
2.—**When burning the prunings, burn as many mummies as possible.**
3.—**In the case of Peach and Apricot blocks plough the ground between pruning and before dormant sprays are applied.**
4.—**Until more evidence is obtained with the new dormant spray, apply lime sulphur 1-10 in the late dormant period, after the mummies have been removed and the ground ploughed.**
5.—**Apply self-boiled lime sulphur, or substitute (a) at petal fall in the spring, (b) when the fruit is half-grown, (c) one month before picking of Peaches.**
6.—**As to Apricots.—Take similar precautions against mummified fruits on the tree and ground.**

Spray with two Bordeaux 12-8-80, the first to be given after pruning, and the second at the late pink bud stage. No fruit cover sprays can be applied to Apricots without injury occurring.

Mr. Fish gave the results of the Pear Black Spot experiments, which he has been conducting in Southern Victoria, and the recommendations given are as follows:—

1.—Spray with Bordeaux mixture 12-8-80 just after the young folded leaves are protruding from the bud.
2.—Spray with Bordeaux mixture 12-8-80 when the young folded leaves have separated from the unopened blossom bud.
3.—Spray with Bordeaux mixture 6-4-80 about three weeks after the fruit has

set. Lead arsenate may be mixed with the spray, providing that the Bordeaux is made up first.

That schedule, said Mr. Fish, was effective under all conditions, but a modification of it could probably be made under Goulburn Valley conditions, as follows:—

1.—Spray with Bordeaux mixture 12-8-80 at the white bud stage.
2.—Spray with Bordeaux mixture 6-4-80 three weeks after the fruit has set.

Spraying Fruit Trees.

STONE FRUITS: APPLES: PEARS.

Lime Sulphur Should be Made up According to Polysulphide Content.

Valuable Experiences From New Zealand.

SUCKING INSECTS have no biting jaws. They are, however, provided with a trunk or proboscis, through which they feed by puncturing the plant tissues and sucking the sap therefrom. To control such insects a contact insecticide is necessary, such as red spraying oil, white spraying oil, lime-sulphur, and nicotine sulphate. Red oil 1-10 applied just prior to bud movement (late dormant period) is recommended for the control of mussel scale, San Jose scale, woolly aphis, and mealy bug, all of which (with the exception of San Jose) emerge from eggs at or about bud-movement period. San Jose, unlike other scaley pests, gives birth to living young. For control of these pests during summer months white spraying oil or lime-sulphur is recommended.

It must be remembered, however, that sulphur in any form must not be applied within at least one week of an oil application.

Lime-sulphur dilutions should be made up according to the polysulphide content of the particular brand used.

The terms, such as lime-sulphur 1-100 or 1-120, etc., hitherto used when referring to a lime-sulphur solution, should in future be substituted by the following: Lime-sulphur 1 per cent., 0.2 per cent., 0.1 per cent., or 0.083 per cent., according to stage of growth.

Fungous diseases are controlled by pruning out dead or diseased twigs and branches and spraying with a reliable fungicide.

The first bud movement should be recognised by all growers as a signal to take immediate action by applying the first fungicidal solution for the control of black-spot, etc., on pip-fruits, and of brown-rot, bladder-plum, etc., on stone-fruits. It is at this period that many of the spores or fungi seeds which have overwintered by means of hibernating mycelium in cankers on laterals and branches and fallen leaves, etc., become active.

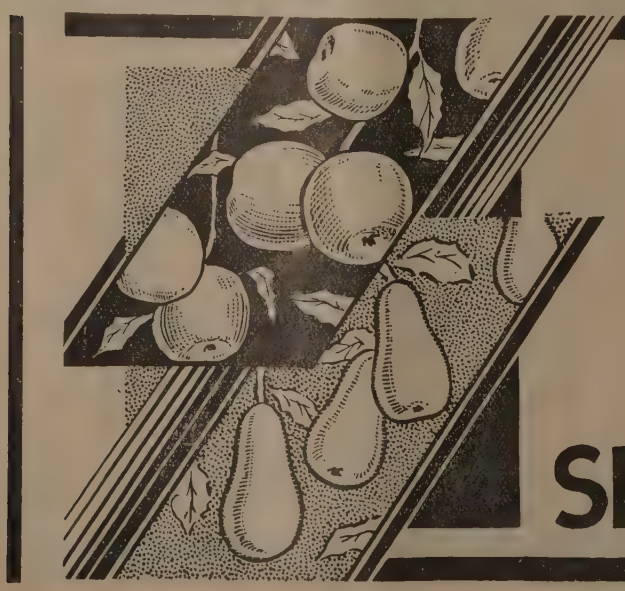
No fungi spore can live in sulphate of copper; therefore an application of Bordeaux 5-4-50 is recommended as a basal covering, and if applied at the right time (bud-movement) many spores on the point of germinating will be killed outright. Moreover, this spray fluid on drying forms a thin film of sulphate of copper on the tree parts, capable of protecting such parts from sport germination for about ten to twenty-one days according to climatic conditions. The object of this treatment is to apply the fungicide before the spores have had time to reach or begin to grow on the tree parts; therefore it is applied more in the nature of a preventive than a cure.

Spraying Operations.

As the time is rapidly approaching when the spray outfit must once more be brought into commission, it is advisable to overhaul it thoroughly, well before it is actually required for use. Particular attention should be given to the engine and pump to see that every part is in perfect working order. The hose should be thoroughly tested, and if at all weak replaced with new. By taking these precautions much valuable time may be saved later on when every hour counts in applying one or other of the necessary specifics.

Stone Fruits.—As these are usually the first to show bud-movement, they should be the first to receive an application of 5-4-50 Bordeaux, followed by an application of lime-sulphur 0.1 per cent. dilution at early pink. Subsequent applications as follows: Lime-sulphur 0.083 per cent. plus colloidal sulphur, 2 lb. per 100 gallons, when 75 per cent. of the petals have fallen. Repeat the latter about every twenty-one days throughout the growing season, according to climatic conditions, until about eighteen days prior to first picking.

Apples. — Apply Bordeaux 5-4-50 at bud-movement and again at green-tip. At light-cluster period spray with lime-sulphur 0.2 per cent. dilution, and again at petal-fall with lime-sulphur 0.1 per cent. dilution, plus colloidal sulphur 2 lb. per 100 gallons water. This should be followed by two applications at ten-day intervals, and thereafter at three-weekly intervals up to the end of Janu-



SUCCESSFUL GROWERS are USING SHELL

Guided by past experience, successful fruit-growers in every Australian State now always use SHELL Spraying Oils, secure in the knowledge that the use of these sprays effects the highest percentage of fruit-pest and disease control.

Order your supplies from the nearest Shell Depot.

THE SHELL COMPANY LIMITED

SHELL SPRAYING OILS

SO 53

ary, when the period between sprays may be extended if rains, fogs, or heavy dews are not experienced.

Pears.—Apply Bordeaux 5-4-50 at bud-movement and again at green-tip. At light-cluster period spray with Bordeaux 3-4-50 or with lime-sulphur 0.1 per cent. dilution. Spray at petal-fall either with Bordeaux 3-4-50 or with lime-sulphur 0.1 per cent. dilution, plus colloidal sulphur 2 lb. per 100 gallons water. This should be followed by two applications at ten-day intervals. Thereafter at three-weekly intervals up to the end of January, when the period between sprays may be extended if the weather proves dry and heavy dews or fogs are not experienced.

The success of disease control not only depends on spraying with the correct mixture, but applying it at the correct time with sufficient force to drive it into every corner and crevice of the tree. Even this is inadequate unless the operator is thorough and every twig, leaf fruit, and branch of the tree is well covered.

—J. W. Whelan, Orchard Instructor, Palmerston North, in "N.Z. Jour. Agric."

Brown Rot

Control Measures Described for this Destructive Fungus.

BROWN ROT is one of the most destructive fungi which affects the fruit producer. The losses run into many thousands of pounds sterling every year.

Dr. R. J. Noble, Biologist, N.S.W., Department of Agriculture, urges attention at this time of the year, thus—

Diseased fruits may fall to the ground or remain attached to the tree: the fruits dry and shrivel and are known as "mummies." These mummies may produce spores over long periods, and they are chief sources of infection in the following season.

1. Control measures consist of removing all mummies and diseased shoots at pruning time. Mummies should also be removed from the ground and burnt with the prunings. Keep the centre of the tree open.

2. As far as practicable, remove "blighted" shoots at blossoming time.

3. Spray with lime-sulphur (winter strength 1-14) 2 deg. B, just before the buds swell.

4. Spray with lime-sulphur (1-50) 26 deg. B when the buds are pinking.

5. Spray with lime-sulphur (1-20) 26 deg. B, just as the petals have fallen.

6. Spray with lime-sulphur (1-120) 26 deg. B just as the fruit is approaching maturity.

In districts in which the disease is generally serious, additional applications of lime-sulphur (1-20) may be necessary between applications 5 and 6, particularly if the weather conditions are generally humid. Growers with only a few trees should apply a fairly continuous series of sprays throughout the growing period, and in addition should remove and burn or bury deeply (one to two feet) all fruits showing the first signs of infection.

The sprays should be applied under strong pressure, and the trees should be thoroughly sprayed.

The disease is difficult to control, but close attention should be paid to all phases of the control programme.

Leaf Curl of Stone Fruits

Do Not Neglect Late Winter Spraying.

EXTENSIVE FIELD TRIALS conducted by the N.S.W. Department of Agriculture have shown that leaf curl of stone fruits, a disease particularly common in the Peach, is easily and effectively controlled by spraying, provided — and this is the important point—the operation is carried out while the trees are still dormant but just before the buds swell. Either Bordeaux mixture or lime-sulphur at winter strength may be used. Applications made later than the stage mentioned, however, are of absolutely no value in control of the condition. Moreover, these sprays themselves may cause defoliation of Peach and Nectarine trees if applied after the setting of the fruit.

It is rarely necessary to make more than one application, but in districts in which cool and moist weather is usually experienced in the spring two applications may be given, one before the buds swell and the second when the flower buds are showing color. Every effort must be made to ensure that the spray reaches all portions of the tree, and particularly the extremities of the small limbs and twigs.

Bordeaux mixture has been found to be slightly more effective than lime-sulphur under conditions which favor extensive development of the disease. **Furthermore, Bordeaux mixture 6-4-40 (which is weaker than winter strength) has been found to ensure satisfactory control of the disease in some districts.**

Although tar distillate ovicides, which are used for control of Peach aphis, have reduced the amount of leaf curl infection in some cases, these sprays are not as effective against leaf curl as is the case with Bordeaux mixture or lime-sulphur.

If the disease is observed to have caused serious defoliation of the trees through failure to spray at the correct time, the new growth of leaves may be facilitated by a light application of a quickly acting fertiliser such as sodium nitrate.

Walnut Culture

THIN-SHELLED WALNUTS, which have created favorable attention, are Freshford Gem, Kelvin and Wilson's Wonder. Worked trees are obtainable.

Mr. L. J. Wicks, Nurseryman and Nut Specialist, of Highbury East, Sth. Australia, writes as follows:—

With reference to the tree of Kelvin (illustration herewith), it would be interesting to know if there is a larger tree in Australia. Although I have read of Walnut trees with much larger measurements than this one has, I have not seen one to equal it, and, judging by its present rate of growth, and general appearance of youthful vigor, it will not be many years before it reaches its century as regards feet of span. This, I should think, will happen before it reaches half a century of age. What size will it be at 100 years?

Original Kelvin Walnut Tree at Joama, near Narracoorte, South Australia.
One of the largest, healthiest and most profitable trees in Australia. Diameter 72ft., height approx. 70ft. The owner Mr. Possingham and friend in foreground are standing sixty feet from the trunk and not far from the foliage.
Photo by L. J. Wicks, Highbury, S.A.

Developing Home Market.

Useful Activity in New Zealand.

Standardisation and Advertising.

ADDRESSING a conference of Victorian fruitgrowers, convened by the Victorian Fruit Marketing Association, Mr. H. E. Napier, of New Zealand, previously manager of the New Zealand Fruitgrowers' Federation, gave details of the plans adopted in the Dominion for developing the local market there, recognising the limitations of export.

Summed up, the scheme is as follows: The fruit is standardised and sold under an advertised label, "The Dominion Mark." (On the same lines as the National Mark Scheme operating in England.)

This has done away with the idea that the best fruit is exported, leaving only poorer stuff for home consumption.

Growers guaranteed supplies of "Dominion Mark" quality for two years—finance raised by growers, paying for the label, plus 1d. per case for advertising.

The public had been educated as to the value of fruit generally, and Dominion Mark quality in particular, resulting in increased fruit consumption and better prices.

At the glut stage Apples were raised from 3/- to 5/- per case.

Lemons were raised from 10/- to 14/- per case, and the consumption in the city was doubled. Many new uses had been found for Lemons, including the cleaning of school children's desks!

An educational advertising campaign was conducted. Much of this was concentrated on school children. The Education Department had assisted splendidly, also medical and dental officers.

Colored posters and advertising material were supplied to retailers.

Classified Advertisement.

WANTED. — 1,000 cuttings Granny Smith for grafts from fruiting trees. Price on rail, CAMPBELL, Kilsyth.

A Profitable Sideline.

Good money is to be earned in the country by the snaring of water rats. Farmers and others living near rivers, swamps or large dams will have no trouble in seeing traces of these little animals, the skins of which are much sought after by manufacturing furriers to-day. They bring high prices right through the year.

Water rats frequent old rabbit burrows. Many ways have been devised in trapping. The jam tin snare is one of the best; make a cross-cut at the top of a jam tin and press the four corners in; place a piece of meat inside the tin; the tin should then be wired and pinned to the ground. When the rat pokes its head in to get at the meat the points of the four corners which have been pressed in prevent it from withdrawing its head. The method of skinning and drying should be the same as a rabbit, that is it should be gloved. Never cut up the belly, as this method is not correct, and lowers the value of your skins. Snares may be set in the afternoon, and visited to take the catch in the early hours of the morning.

Care should be taken to see that the skins are thoroughly dried before packing for transit or storing, otherwise they may arrive in a damaged condition.

Messrs. SLATTER & CO., of Nicholas Building, Swanston Street, Melbourne, will purchase these skins in any quantity, and pay top market price. On receipt of a parcel, they grade the pelts, and forward you a cheque by return mail. This firm are also buyers of other skins, and will always be pleased to receive consignments of same from the country.

Courage consists not in blindly overlooking danger, but in seeing it and conquering it.—Richter.

The "HARVEY" CITRUS GRADERS AND DRY POLISHER BRUSHERS

Sizes Accurately—Eliminates Bruising

Fitted with Special New Type Grading Element

With Double-edged Grading Units, which include Soft Cushion Rubber Sections; also Rubber Rollers running on Ball Bearings, which are adjustable to one-sixteenth inch, one-eighth inch, or any size grade desired. Each grade is adjustable without interfering with grades on either side.

Model 11A Citrus Grader, equipped with Automatic Feed Hopper, Roller Elevator, Sorter, and Two Run-way Citrus Dry Polishing Brushes.

COMPLETE WET AND DRY LATEST PROCESSING EQUIPMENT

Including Soaking, Wet Scrubbing, Sterilizing, Drying and Dry Polishing Equipment, Sorting Tables and Graders to Give 2 or 3 Qualities.

Built to Suit the Requirements of

CITRUS GROWERS AND PACKING HOUSES

D. HARVEY, Orchard Implement Specialist, BOX HILL, VICTORIA

INTERSTATE REPRESENTATIVES:—

New South Wales.—Buzacott & Co. Ltd., 7/11 Market Street, Sydney.

Queensland.—Clark & Fauset Ltd., 73 Eagle Street, Brisbane.

Tasmania.—Max Geeves Pty. Ltd., Davey Street, Hobart.

„ Clements and Marshall Pty. Ltd., 119 Cimitiere Street, Launceston.

„ Harry Murray, Devonport.

Citrus News and Notes.

The Pruning of Lemons

IT HAS BEEN FOUND that with trees allowed to develop unaided by pruning, after bearing for several years, the limbs making up the framework grow haphazardly, frequently crossing each other. Producing Lemons for the market under such conditions is considered less profitable than under the correct system of pruning, because of the high proportion of coarse or rough type of fruit present, and the large number blemished by abrasions. In addition, the color of fruit borne on self-developed trees is inferior, being very yellow when mature.

Lemon trees bear their fruit mainly on the laterals (differing in this respect from Oranges), and also to some extent on the terminals of fruiting twigs. The free development of laterals in the interior of the tree is mainly determined by the position of the limb and its accessibility to light. A fairly open centre with limbs sloping outwards as much as possible is recommended, in order to allow more sunlight to enter the middle of the tree. This forms a denser growth of foliage and the production of new fruiting wood closer to the framework of the tree, shortening the side branches and laterals as much as possible. The development of laterals along the limb should not be suppressed as in the case of mature Orange trees.

The first main pruning should be done early in spring, up to blossoming time, and the earlier it is done the stronger the subsequent growth will be. The second pruning should be done from two to three months after the completion of the first. On very vigorous trees a further pruning may be necessary two or three months after the second pruning, and these operations should suffice.

—L. Paynter, Orchard Instructor, Auckland, in "N.Z. Jour. Agric."

Combating Red Scale. — Fumigation for combating Red Scale is now generally adopted: tests have revealed a 90 per cent. to 95 per cent. kill. Science officers of the Department of Agriculture state that fumigation is more effective than spraying.

EXPORT OF ORANGES.

Renmark.

Renmark (S.A.).—About 4,000 cases of Oranges were sent to the United Kingdom from Renmark during June.

N.S.W. CITRUS GROWERS.

Branch of Defence League Formed at Griffith.

A meeting under the auspices of the N.S.W. Citrus Defence Association, was held at Griffith on June 2, when a local branch was formed.

Office-Bearers were elected—President, Mr. J. E. Ward; vice-president, Mr. J. C. Erskine; secretary and treasurer, Mr. J. Holroyd. The committee consists of Messrs. C. Connor, H. Lucca and L. Savage.

EXPERIMENTS WITH CITRUS.

Mr. J. L. Provan, research officer of the Victorian Department of Agriculture, inspected the Merbein Citrus trees, which had been re-budded, and was satisfied with the progress made. Samples of Citrus from the off-type trees, which have been worked with standard tree buds, have been collected for analysis by the Agricultural Department.

Mr. J. L. Provan visited Mildura in early June to secure sample cases of Grape-fruit and Washington Navels to send to Palestine, in exchange for samples from that country. The fruit will probably be forwarded this month. Mr. H. Clapp, Chief Commissioner of the Victorian Railways, and Mr. Campigli, assistant general manager of the Palestine Railways, arranged the exchange.

CITRUS BUD SELECTION.

The Bud Selection Co-operative Society of New South Wales is performing excellent service: the improvement in the strains of Citrus is the constant aim. The society, which consists of representatives of the Department of Agriculture, growers and nurserymen, has systematically recorded a number of orchards for four years, and the information thus obtained is being used to the best advantage. The trees showing the most desirable characteristics are given special treatment, so that the maximum number of buds can be obtained.

Citrus Survey.—The Federal Government is making a survey of the citrus industry and the Mildura growers have been asked to submit particulars of area, age and yield of trees, quality of fruit and manure used.

Victorian Citrus Crops

In a report issued on June 1, the Victorian Department of Agriculture stated that climatic conditions in the Citrus districts had been exceptionally dry, and in many districts growers were applying light irrigations. Both the trees and the cover crops would materially benefit from a watering under the present conditions, and it should also enable the trees to withstand future frosts.

The Citrus fruits now arriving on the market are of first quality. The dry season has dispelled any fear of an early infection from Anthracnose and Septoria, but growers who experienced the ravages of these diseases during recent years are advised to guard against a late infection by spraying with Bordeaux mixture at a strength of 3-3-50.

STANDARDS FOR CITRUS TREES.

At a meeting of the Mildura Horticultural Society, Mr. J. Rickards said that the enormous quantity of off-type fruit produced was a big problem for the growers. The suggestion has been made that a standard be adopted for Citrus trees, and Mr. K. Muir and Mr. G. Winter have been asked to prepare a report on the subject.

The department will again this year draw the bulk of its supplies from the Murrumbidgee irrigation area. Oranges required for the northern line will be obtained from the Gosford district.

PALESTINE CITRUS.

An increase in the citrus crop of Palestine is reported. Last year's crop was 4¼ million cases, the coming crop is estimated at six million cases.

An extensive advertising campaign is being organised to assist in the disposal of the crop.

Growers should get into touch with Empire Produce Exports.

PITTS & LEHMAN

129 PITT STREET, SYDNEY

And take advantage of their wide connection with importing firms in England, Canada and Europe.

Representatives of—Ridley & Houlding Ltd., London; Mutual Brokers, Montreal; R. & W. Davidson Ltd., London and Glasgow; Roberts Brining & Co. Ltd., London and Glasgow; Thos. Allan & Co. Ltd., Glasgow, and W. Gosley, Hull.

SOUTH AUSTRALIA

Mid-Murray Notes

Levant and Australian ∴ Sultanas Compared ∴ ∴ Burying Vine Cuttings ∴ Ploughing in Green Manure

(By our Special Correspondent.)

Renmark, 18/6/34.

GROWERS OF DRIED VINE FRUITS in Australia often ask the question: "Why do our Sultanas bring a lower price on the London market than Cretan fruit?" This question has been more or less answered, or at least has had some light thrown on it by the act of Mr. E. N. Seary, manager of the Renmark Growers' Co-operated. Samples of the highest priced Sultanas on the London market were bought and brought out here, together with some of our own 1933 fruit. About 100 shareholders of the above company inspected these samples and were addressed by the manager, and Mr. H. D. Howie (of the Export Control Board), and Mr. C. Ruston. Although the Cretan fruit and Smyrna and Californian (sulphur bleached) fruit showed itself of a lighter color than our own, there was no question about Australian Sultanas having more body, were better graded and packed, and having a better flavor than that of our competitor countries. It is quite evident that there is a market for golden colored fruit, although this market is decidedly limited. London buyers appear to buy on color alone. There has been a desire on the part of many growers to attempt to process a certain quantity of fruit in competition with this high priced article, but whether it will prove an economic proposition, is another matter. Some years ago a few Greeks came to Mildura and attempted to produce the fruit as processed in their own country, but there appeared to be a radical difference in the constitution of our fruit and the dried article did not bear comparison with that grown in their country.

It appears evident that if we cannot capture the market for the highest quality Sultanas, we can at least

command the bulk sales

in the United Kingdom market with our exportable surplus. Knowing that the quality of our fruit will eventually force its way into the stronghold of the foreigner.

Considering that the Levant has supplied the United Kingdom market for centuries, it speaks well for our fruit that nearly 40,000 tons were sold in 1933 in a market with a capacity of absorbing approximately only 60,000 tons.

Seasonal work at the present time consists of ditching and pruning. Since the practice

of burying cuttings

came into vogue in Mildura a few years ago, this method of disposing of cuttings has spread in the Renmark areas at a rapid rate. A special plough has been designed by H. V. McKay, capable of making a ditch over a foot deep with side wings to throw the earth well away from the edge of the furrow, thus enabling the pruner to dispose of his cuttings without much difficulty.

This method applies chiefly to Sultana cuttings, prunings from the Currants can be disposed of by throwing them on top of the green cover crop, and

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Increased Classification for Apples and Pears

ENTRIES CLOSE SATURDAY, 8th SEPTEMBER

WRITE FOR PRIZE LIST

LOUIS MONOD, Secretary, R. A. S. of Victoria
422 Collins Street - - - - Melbourne

cut up with the disc coulter when ploughing in the cover crop. Growers are seized with the need for returning all the organic matter they can get to the soil and by burying the vine cuttings, it not only creates organic matter, but in the process of decay, adds an appreciable amount of phosphoric acid to the soil.

During the last few years there has been a marked increase in the number of growers who have

planted cover crops

to increase the fertility of the land, and there is an awakening interest in the process of decay and nitrification of these plants, yet outside technical works on this matter, little opportunity is afforded them to increase this knowledge. The main object sought is to improve the mechanical and physical condition of the soil, at the same time to be sure that the process of nitrification takes place at a time when the vines can use it to the best advantage.

As it takes from four to six weeks for nitrification to take place, these crops should be ploughed under four to six weeks before bud burst.

The maximum amount of benefit derived from cover crops is when they are ploughed under while in full flower, should there be a delay, and the plants allowed to toughen, decay and nitrification takes longer. When organic matter is incorporated in the soil, the first process of change is to convert it into humus. Non legumes remain at this stage, but legumes are further acted upon by the soil organisms, and another change takes place which converts this humus into nitrogen, upon which the roots feed. Nitrogen, whether from an organic source or inorganic (such as artificial nitrogen) should be plentifully supplied to the tree or vine before setting of the fruit.

Instances have been known when cover crops have been allowed to mature too late in the season so that the available nitrogen is used by the plant at the wrong time, causing a rapid flow of sap during setting time, in which case bud setting occurred.

Cover crops should be planted early and turned under early to ensure the full benefit. The need for sowing phosphates with cover crops has a twofold purpose, as it not only increases the bulk of growth, but is an aid to nitrification, which cannot take place in the absence of phosphates.—"Nemo."

* * * * *

Renmark, June 23, 1934.—

Barmera, one of the irrigation settlements in the Mid-Murray areas, is one day destined to play an important part in the development of the tourist traffic in this State. The town, situated on the banks of Lake Bonny, is in a picturesque position. This large inland lake, measuring five miles long by three miles wide, is of fresh water, impounded by a lock from the overflow of the Murray. The town is growing rapidly, and reflects the vigor of this young settlement. Vineyards and Orange orchards border the town boundary, and create a fitting setting to the picturesqueness of this large sheet of water, where wildfowl abound.

The lake is kept as a bird sanctuary, and becomes a delight to lovers of native wild-fowl, where they can be observed under natural conditions, to which they have been accustomed for centuries past.

The Barmera area embraces those of Nookumpka, Loveday and Cobdogla, irrigating in all nearly 5,000 acres. A single Humphry pump (the largest in the southern hemisphere) pumps the water, which gravitates to Loveday, where it is raised to irrigate the higher levels of Loveday and Nookumpka. Mr. Shillabeer, the officer in charge of this area, is a very courteous officer, who has the interest of the settlements at heart.

These areas are occupied almost exclusively by returned soldiers, who have all had to learn the business of fruit growing and drying from beginning to end, and a keener lot of growers would be hard to find anywhere. Their enthusiasm could be guaged by the energetic way discussions were carried out at the annual conference of the Agricultural Bureau, held there yesterday, discussions which disclosed the high state of intelligence attained by these keen young men, who were able to follow matters of a highly technical nature, appertaining to plant life, soil constituents, drainage, and processing the dried article.

Many scientific investigations are in progress in the ramifications of our industry, from bud determinations to ridding the land of surplus soil water by plant transpiration, and, in a visit to progressive settlers, we found the latter practice already in operation, showing that these growers have kept in touch with modern investigations under irrigation conditions.

Mr. W. McGillivray has 20 acres near Barmera and 12 acres in the Loveday area, planted with a mixed variety of vines and Oranges. His seven acres of Sultanas were in good heart, and showed fine canes for next year's fruit, while the rest of the vines also reflected in their cane growth a high state of fertility. Mr. Gillivray believes in growing winter cover crops — his Beans looked well where irrigation had been timely. This grower adopts the practice of burying vine cuttings, and has the centres of his vine rows delved to a depth of 15 inches, with tares just coming out of the ground on the sides of the delved furrow. Poultry keeping is a sideline with this grower, who finds Australorps a good variety in this locality, the great advantage of this breed being that the young cockerels,—which are usually of no value in the lighter breeds,—pay him sufficiently to pay for the feed of pullets until they arrive at the laying stage.

Mr. R. G. Hallam lives about a mile out from Barmera town, and has mostly Sultanas. This block showed signs of seepage trouble some years ago, and has since been drained, after which it has made a remarkable recovery. Barley was planted on the affected areas for two years, and the crop ploughed under to "buck up" the organic matter. After Barley, Beans have taken their place, and have grown freely. Beans, besides adding a bulk of organic matter to the soil, also add a quantity of nitrogen. Scientific experiments are being carried out on Mr. Hallam's block by officers of the Scientific and Industrial Research, under Mr. A. V. Lyon, to determine the minimum amount of water required to mature a crop: it has been found beyond dispute that the majority of growers use too much water.

Mr. C. W. Till is a live-wire in all public matters, and takes a very keen interest in horticultural matters. As secretary of the Agricultural Bureau, he helped to make the conference a great success. Mr. Till has twenty acres under irrigation, planted with a mixed variety of drying and wine-making Grapes and Oranges. This grower has not missed a green manure crop for ten years, and is able, by this means, to sustain a good crop return, up to two tons of dried fruit per acre. About 5 cwt. of 3-1 super and sulphate of ammonia per acre is applied,

Fruit Trees & Fruit Tree Stocks

Splendid Stock of Healthy Plants Available.

Apples, Peaches, Pears, Plums, Apricots, Citrus, etc., packed and despatched to all parts of the World.

Overseas Orders receive careful and prompt attention.

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'Phone, Ringwood 171.

as well as yearly green manure crop. The block has been drained, good drainage having been struck at a depth of about 30 ft., and the drainage is proceeding satisfactorily. About half a ton sulphur was applied to an acre of vines by way of experiment, following the investigation by Professor Prescott on the discovery that a certain bacteria, which has been isolated by the Waite Research Institute, acts on sulphur, and turns it into sulphuric acid, thereby neutralising an alkaline reaction in the soil. Besides noting a difference in the mechanical action of the part so treated, Mr. Till cannot yet see any appreciable benefit.

Mr. E. Farmer has 30 acres, 18 of which are planted with Sultanas, and gets up to two tons per acre, on the usual method of planting cover crops of Beans, and using 5 to 6 cwt. of mixed super. and sulphate of ammonia. Mr. Farmer has a dehydrator installed, and was just finishing off some Sultanas when visited. This dehydrator is constructed on scientific principles, and has proved a boon to him in drying the last of his fruit. Dehydration is a specialised study, in which a proper mixture of dry and humid heat is forced over the fruit to attain a pliable texture in the finished article. A little 1½ h.p. petrol engine drives a 2ft. 6in. fan. An old Ford rear axle and bearings is used as a spindle, and the garage constructed fan supplies all the forced draught required, and acts admirably. Mr. Farmer is so pleased with this outfit that he is enlarging it for next year.

Mr. L. P. White has 27 acres under vines and Lucerne, and keeps in touch with all modern vineyard practices. This grower is, as are all the others visited, a keen follower of what is now termed the Voullaire system of cultural practices. Mr. R. U. Voullaire, Junr., of Merbein, has evolved certain methods that have given such outstanding results that most modern thinkers and workers on irrigation lands have more or less adopted his practices. This consists chiefly of applying organic matter, and chemical fertilisers in such proportions as to create vigorous growth. This growth is later controlled to enable the vines to throw their energy into fruit production. Burying cuttings in deep ditches acts as a subsoiling operation, besides adding organic matter to the soil. Mr. White has made many trips to Merbein to keep in touch with Mr. Voullaire, and his cultural practices, and has derived a great deal of benefit from such trips.—"Nemo."

Balance the Ration
with
POTASH
It does not matter how good your results have been with Nitrogenous or Nitro-Phosphatic fertilizers . . . indeed, the better these have been, the greater the necessity to make up for the consequent drain of natural potash supplies.
"SUN BRAND"
guaranteed
POTASH
The addition of potash will ensure absence of leaf diseases and reduce the tendency to biennial (alternate) cropping.
Use potash and phosphates on a green-manure crop and a complete manure, such as 2:2:1 in the spring.
See that each tree receives a minimum of 2 lbs. of potash annually.
Write for further particulars to:
PACIFIC POTASH LTD.
SCOTTISH HOUSE
19 BRIDGE STREET, SYDNEY
F.I./34
SUN BRAND Potash
POTASH MAKES all THE DIFFERENCE

Agricultural Bureau

Conference of River Murray Branches.

THE ANNUAL CONFERENCE of the River Murray branches of the Agricultural Bureau was held at Barmera on June 22, Mr. H. R. Williams occupying the chair. Mr. H. C. Pritchard was conference secretary. Mr. C. W. Till, secretary for the local branch, conducted the affairs of the meeting. Mr. H. R. Williams, in giving the chairman's welcome address, spoke briefly on the importance attained by Barmera in having been honored with its first annual conference.

The opening address was given by Mr. J. B. Murdoch, representing the Advisory Board of Agriculture. Departmental officers present were Professor Perkins (Director of Agriculture), Mr. G. Quinn (Chief Horticultural Instructor), Mr. J. K. Taylor, M.Sc., of Waite Research Institute, Mr. F. Arndt (Divisional Horticultural Instructor), Mr. Rodney Fowler (manager Blackwood Experimental Orchard), Mr. N. Fotheringham (manager Berri Experimental Orchard), Mr. Anderson (Poultry Expert), Mr. Orchard (District Horticultural Instructor in non-irrigated areas).

Papers were read by the following members: Mr. O. Weste, "Some Aspects of Vineyard Manuring," (Renmark Branch); Mr. N. S. Fotheringham, "Insect Pests in Irrigated Areas" (Berri Branch); Mr. F. R. Arndt, "Review of 1934 Drying Season," "Conditions and Results of Sultana Vine in Connection with the Six-year Pruning Period"; Mr. W. McGillivray, "Poultry Keeping" (Barmera Branch).

The evening session was taken by Mr. J. K. Taylor, M.Sc. (of the Waite Research Institute, under the C.S.I.R.), who gave an address on "Progress of Irrigation Research on Horticultural Areas of the River Murray, with Special Reference to Soil Problems."

The following questions were submitted for discussion, and proved of lively interest:—

1.—Would an application of sulphate of ammonia applied to the vines late in the season be beneficial to next crop?

Prof. Perkins answered to the effect that manures should be applied early, as an undue prolongation of growth in the autumn might upset the maturation of canes for the following year's crop.

2.—Is there a loss in value of manures when exposed to the air after being in the soil for a time?

Prof. Perkins said that manures should be where they can be used by the vine roots, and cannot be so used if they are on the surface.

Further questions on the merits of dusts versus sprays as insecticides and fungicides was dealt with by Mr. G. Quinn..

The question dealing with the lack of uniformity in grades of Sultanas from different centres proved a lively debate, and lasted far longer than any other question.

It was strongly voiced by all speakers that grades should be constant in color and quality from year to year, and should not vary under varying seasonal conditions.

The conference was attended by over 100 delegates from all centres, and proved one of the most interesting and useful held for many years.

A vote of thanks was passed to all those who contributed papers, to the departmental officers, to local members for the energy with which they had carried out the organisation of conference time tables, which helped to make it a success.

Wine-Grapes. — The report issued by the delegation representative of the Wine-grape growers of South Australia, on their return from their tour of Sydney and N.S.W., acknowledges the assistance rendered by the Murrumbidgee Area and the Wine-Grapes Marketing Board.

It is felt that the delegation has been very successful, and that some form of fixation in Grape prices will be brought about.

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RELIABILITY

AND DEPENDABLE GERRARD SERVICE

GERRARD WIRE TYING MACHINES CO. Pty. Ltd.

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SYDNEY. BRISBANE. ADELAIDE. PERTH.

WESTERN AUSTRALIA

Improving Local Marketing ★ ★ ★ ★ Success of Apple Sales Board

Growers and Traders Meet in Successful Conference

WITH THE OBJECT of improving the net returns of fruitgrowers, a voluntary scheme is in operation in W.A., under the title of the Apple Sales Board. This is really a voluntary control system of the marketing of cool storage Apples.

The programme includes a regular survey of the total quantity of each variety of Apples cool stored within the State, forecasting trade requirements in local, Interstate and export trade, co-operative transit by rail.

Advices are sent to growers through country cool stores and selling agents to endeavor

(1) To avoid excessive storage.

(2) To avoid storage of unsuitable varieties or inferior fruit.

(3) To avoid the arrival of irregular quantities, and thereby to avoid market fluctuations, and ensure continuity of a maximum demand.

(4) To avoid the clashing of consignments from different districts.

(5) To advise regarding marketing periods, and arrange for marketing of various varieties and lines at the most suitable times, and for the release of quantities in a proper relation to total stocks, market capacity and condition.

The board's scheme does **not** involve (a) pooling, (b) export operations (although willing to advise), (c) restriction of trade activities (growers are free to consign to whatever agents they desire).

The board's operations were initiated in 1930, and undoubtedly have been largely instrumental, not only in ensuring improved results, but in avoiding grave dangers of market collapse.

In the advisory committee there is constituted a body of experts in marketing, who obtain collective information never previously available, and to whom advice of cool store officers is always available. Growers have personal access to cool store officers and agents, and every endeavor is always made to seek growers' opinions and to meet their wishes.

* * * *

Meetings of the Apple Sales Board have been held during May, 1934, at the following places:—Donnybrook, Bridgetown, Boyup Brook, Mt. Barker, Albany.

The chair was taken at Donnybrook and Bridgetown by Mr. A. P. Sharp; Boyup Brook, by Mr. F. Knapp (chairman of Road Board); Mt. Barker, by Mr. J. McNeil Martin; Albany, by Mr. L. L. Hill, president of the Albany Branch of the W.A. Fruitgrowers' Association.

The visiting party attending the meetings consisted of Mr. T. Price (chairman of the Marketing Committee), Messrs. W. J. Berryman, R. M. Carter, M. J. Scanlon, F. J. Simper, H. W. Soothill, D. J. Sutcliffe (hon. Asst. secretary), together with the Hon. W. D. Johnson, M.L.A. Mr. W. Arnott was present at the Bridgetown and Albany meetings, and Mr. F. W. Langzke at the Mt. Barker and Albany meetings. Mr. F. Simper was unable to attend the Mt. Barker meeting.

At each meeting, the history of the scheme was reviewed, and a description given of the methods adopted. Stress was laid upon the importance of improvement of quality. The success achieved in creating better values for late Apples by limitation of quantities was emphasised. The danger of increased quantities preventing such price margins in this and future seasons was mentioned, the factors contributing to an increased late total being mentioned as:—

> Export Restrictions, Increased Production, Disappointing Export Returns for Late Varieties, Merchanting Operations, and Difficult Seasonal Conditions.

It was pointed out that lower late prices seem inevitable this year on the local market, as a total in cool stores of over 100,000 cases is forecast.

The suggestion was made that if, in future seasons, some census of the crop position could be made about April 30, steps for inducing sufficient late export to ensure a bouyant late local market might be undertaken in accordance with the position revealed.

Useful discussion took place at each meeting, and each meeting carried unanimously a vote of confidence in the board and its work, incorporating expressions of thanks for past efforts, and requesting that the operations be continued.

The general opinion amongst the party conducting the meetings is that the publicity secured is of very substantial value.

W.A. FRUIT EXPORT.

Pre-Cooling Plant at Fremantle Would Cost £70,000.

It is estimated that the cost of suggested pre-cooling stores for fruit on the Fremantle wharf would be £70,000.

A question was put by Mr. R. S. Sampson, M.L.A., in the Legislative Assembly, as to whether it was the intention of the Government to provide pre-cooling stores, and, if so, when; but the Minister for Agriculture, Mr. H. Millington, replied that it was not the practice to disclose the Government policy in replying to questions.

INSPECTION SHED IN W.A.

Progressive Activity at Mt. Barker.

(To the Editor.)

Sir,—A few months back you had a photo. in your paper of an Inspection Shed, and I was struck at the time that it was very similar to the one we were having erected here, and I had a photo. taken, which I am sending you herewith.

This shed has been built as a result of the new regulations. The shed is 125 feet long by 50 feet wide, and has six receiving doors, and the same number for discharge into trucks, and each door has a set of gravity rollers running straight through the shed.

The walls consist of weatherboards, but two feet from the bottom and two feet from the top are louvred to allow for a free passage. The outer sliding doors are of timber, but inside are duplicate Cyclone netting doors, so that during the hot weather the outer doors can be left open, and the Cyclone doors closed during the night to allow a free passage of air, and the roof is also of Fibrolite. The line at the end of the shed is a window over a packing bench to allow for a tipping out of the cases for repacking if necessary. The shed was commenced on February 5, and we were receiving fruit for inspection on 26th. You will therefore see that it was a very quick piece of work.

Yours faithfully,
ARCH G. T. BOOTH,
Secretary, Mt. Barker Fruitgrowers' Cool Stores' Co-op. Pty. Ltd.
Mt. Barker, W.A.,
4/5/34.

[We are pleased to have this information from Mr. Booth, and publish the picture on this page.—Ed., "F.W."]

Fruit Inspection Shed at Mt. Barker, W.A.

Mt. Barker Cool Stores.

The annual meeting of shareholders of the Mt. Barker Fruitgrowers' Cool Storage Co-operative Society Ltd. was held on May 30.

The balance-sheet, which was adopted, showed a satisfactory state of affairs. The net. profit for the year ended December 31, was £3,431/13/5. The profit for the previous year's trade was £4,090. The original plant account has been practically wiped out, and the society has started a plant replacement reserve account.

It was decided at the meeting, on the recommendation of the directors, that after paying the usual dividend and reserving the necessary amount for taxation, the balance of profit, approximately £2,700, should be divided amongst the shareholders as bonus on business done during the year. This is nearly half the subscribed capital.

CANNED FRUITS IN U.K.

Increased Duty on Foreign Canned Fruits Possible.

The possibility of an increase in the duty on foreign canned fruits entering Great Britain is under discussion. The present duty is 15 per cent. ad. val. Australian canned fruits are free of duty.

So far this season, Australia has exported 1,200,000 cases of canned fruits to Great Britain. Only 500,000 cases were exported for the whole of the previous season. America exports about 3,000,000 cases to Great Britain annually.

It is understood that the reason for the application for a higher rate is due to the large imports of canned Plums and berry fruits from America. Australia's principal exports, canned Pears, Peaches, Apricots and Pineapples do not compete seriously with the British industry.

If a higher duty on foreign canned fruits is granted the industry in the Commonwealth would benefit.

TASMANIAN EXPORTS.

The Tasmanian fruit export season ended with the sailing of the S.S. "Justin',' with 43,000 cases of fruit for U.K.

Fruit Trees of Outstanding Quality

True to name, healthy and well-rooted. Citrus trees in large quantity—
Budding Wood supplied by the Bud Selection Society of N.S.W.—
Worked on Lemon, Sweet Orange, and Trifoliata Stock.

LARGE QUANTITY OF GRAFTED PECAN NUTS OF 12 VARIETIES FOR SALE THIS SEASON.

CATALOGUE FREE ON APPLICATION. ESTABLISHED 1901.

L. P. ROSEN & SON, Fernhill Nurseries

Pennant Hills Road, CARLINGFORD, New South Wales Phone: Epping 96

VICTORIA — Association Reports . . . Items of Interest

Victorian Fruit Crops.

ALTHOUGH there was a good Apple and Pear crop for 1934, the trees in all districts are showing a good supply of buds for next spring, and it is anticipated that there will be another good crop of these fruits next year (states the Victorian Department of Agriculture on June 1).

There were a few rare cases of premature flowering, owing to the warm, dry autumn, but this condition was infinitesimal in relation to the number of trees grown.

In the Goulburn Valley, Peach trees have budded very well, especially the Phillips variety.

The figures for the present fresh fruit export season show that, up to and including May 26th, 700,744 cases of Apples, 214,832 pkgs. Pears, 6,216 pkgs. Plums, 967 pkgs. Grapes, and 32 pkgs. Passion-fruit have been exported from Victoria to the United Kingdom and the Continent of Europe.

Viticulture.

The new wines are very satisfactory. Though gravities and color were, in many cases, on the low side, fermentation temperatures were ideal, and the 1934 wines are very nice, if not vintage wines. They are clearing more promptly than usual, which augurs well for their subsequent behaviour.

In the dried Grape districts, rain would also be welcome. Green manure (Tick Beans) would greatly benefit. The practice of burying the vine cuttings is becoming general. Special delvers are being turned out by local implement makers for the execution of the deep central furrow, to receive the cuttings.

The drying campaign has proved disappointing, chiefly as regards color, which is on the dark side. The Grapes sugared up well, and there is much excellent fruit, were the color lighter. It is curious that the February rains, which were not really heavy, should have so adversely affected grades. The cold dip was used by several growers. Despite the apparent unsuitability for this season, it has given very good results, where properly applied, plenty of rack room, and fruit not spread too thick. The method has again shown its value for the production of a high-grade sample.

According to the appearance of the buds there should be a good crop of Apples next season at Bacchus Marsh.

Orchard Cultivation.

Interesting Demonstration at Beaconsfield, Vic.

There was a good attendance of orchardists from Beaconsfield and surrounding districts at a demonstration given by Mr. Hassett, of E. Hassett & Sons, of the Howard Rotary Hoe, on the property of Mr. W. Brown, at Upper Beaconsfield on June 5.

The hoe was tested working close to the trees as well as on a patch of Couch Grass to the satisfaction of those present.

The principle of construction of the Howard Rotary Hoe was noted with appreciation; instead of the resistance between the propelling gear and the tillage tools, as with a tractor, it was observed that with the Howard Hoe, the gear drive from the engine to the revolving hoes relieved the traction wheels of a good deal of pulling strain, whilst the thrust caused by the resistance of the ground to the blades assisted in propelling the machine forward.

Where soil is bound together with Couch or other growth, heavy ploughing and much after cultivation are necessary, but, with the "Howard," owing to the unique shape of the hoes, all the ground is cut clean out without tearing or thrusting, consequently no weeds or green manure are missed.

Dr. CUNNINGHAM AT MILDURA.

No Sign of Fruit Fly.

Dr. G. H. Cunningham, of the New Zealand Government, made an inspection of the Citrus groves in Mildura in connection with the New Zealand embargo on certain Australian fruit. He also visited Coomealla and Curlwaa. **The tests, which have been conducted by several growers during the past five years, have not disclosed the presence of fruit fly in the district.**

GOULBURN VALLEY NOTES.

Shepparton Cannery.—The cannery of the Shepparton Fruit Preserving Co. Ltd. is reported to be the largest fruit cannery in the British Empire. Over 10,000,000 tins of canned Apricots, Peaches and Pears are now processed annually.

Since 1917 the amount paid to growers for fruit has increased from £3,387 to last season's record total of £105,138. The pack itself increased from 432,000 tins to 10,751,484 tins, and the tonnage of fruit processed from 350 tons to 9,204 tons. These figures only refer to fruit processed for canning, and do not take into account any fruit treated for jam.

MR. FISH AT SHEPPARTON.

There was a crowded attendance at the Star Theatre, Shepparton, on June 8, when Mr. S. Fish, M.Ag.Sc., gave a valued address on methods for controlling Brown Rot.

Mr. J. G. B. McDonald, who presided, congratulated Mr. Fish and the Department of Agriculture on the good work accomplished regarding control of Apricot Scab and Transit Rot. The Northern growers had confidence that Mr. Fish would bring the Brown Rot problem to a successful conclusion.

SHEPPARTON FRUITERERS.

At a meeting of the Shepparton Fruiterers' Association, on June 11, it was decided to invite caterers and confectioners to join forces with the fruiterers, thus providing wider scope for the association, and giving it greater weight. Cut-throat competition on the part of non-ratepaying foreigners was criticised. No objection was taken to the use of a block of land as a "market," but the selling of fruit at ridiculously low prices, also the Banana "war" were deprecated.

Kyabram. — Cases of fruit were despatched from Kyabram Railway Station from December 1 to April 30, as follows:—To Melbourne, 87,277; Sydney, 11,721; Bendigo, 3,854; Shepparton, 1,517; Yarram, 282; Sea Lake, 202—Total, 104,853, compared with 138,883 cases for the previous season.

Kyabram.—Growers here appreciated the attendance of Mr. S. Fish, M.Ag.Sc., of the Department of Agriculture, who gave detailed information regarding Brown Rot control. Mr. Fish also answered questions regarding experiments in Southern Victoria on the Summer Spot of Pears.

VINE DISEASE.

Mr. de Castella, Victorian State Viticulturist, has issued a warning to growers re a vine disease known as Court-Noue, which he states, may become a

FRUIT GROWERS!

Your Spring Dressing of

Sulphate of Ammonia

should be BALANCED with

Phosphate and Potash

Thus :—

IRRIGATION AREAS:

4:4:1 4-8 lbs. per tree

Super Ammonia Potash

COASTAL AREAS:

2:2:1 4-8 lbs. per tree

If *Potash* is not desired, use
1 : 1 Super and Ammonia)

These Mixtures are obtainable from
ALL MANURE COMPANIES
ALL PACKING SHEDS
ALL AGENTS

H3/34

grave menace in Australia. West Australian experience has shown that the disease can develop under Australian conditions.

Harcourt, 18/6/34.—The dry weather during June has been a bug-bear. The reservoirs are still being depleted. There have been several sharp frosts.

The reworking of varieties is continuing apace.

Discussions are continuing locally as to the best methods for organising the industry. Some favor an Export Control Board, others are quite opposed to this idea.

The lecture, by Mr. S. Fish, M.Ag.Sc., of the Department of Agriculture, on June 7, was highly esteemed: the lecturer showed slides dealing with experiments regarding the Summer spot on Pears. A cordial vote of thanks was expressed to Mr. Fish, on the motion of Mr. E. Pritchard, J.P., and Mr. D. Winkelmann, of Campbell's Creek; Mr. J. Thomlinson, District Orchard Supervisor, was also thanked for operating the lantern.

Mr. Howard Clark, Secretary of the Harcourt Fruitgrowers' Progress Association, recently resigned to enter into business in Melbourne.

Victorian Berry-Growers.

Request for Increased Price Refused.

The Victorian berry growers recently sent a request to the Fruit Industry Sugar Concession Committee, asking for an increase of 1d. per lb. for their fruit from the factories receiving the Federal Sugar Concession. The present price is 3d.: growers want 4d.

The request was not granted, as it would not be constitutional to fix a higher price for Victoria, and if the amount paid was increased in the several States there would be an over-production, which would cause more difficulties in Victoria.

The chairman of the Committee (Mr. Townsend) explained that it would be unconstitutional to fix a higher price for Victoria. If the price throughout the Commonwealth were increased to a level profitable to Victorian growers, production in other States, especially in Tasmania, would increase, and the problem of over-production of fruit, which was responsible for the difficulties of the Victorian growers, would be intensified. Mr. Townsend said that if any other suggestion for helping Victorian growers were made it would receive favorable consideration by the committee.

At a recent meeting of Monbulk berry growers, a letter was received from the parent body, Silvan U.B.G.A., welcoming the formation of the branch at Monbulk, and inviting delegates to the annual meeting at Silvan. Messrs. A. Kay and A. G. Fenwick were appointed.

Pruning Apple Trees.

Hints Regarding Delicious and Yates.

WITH regard to pruning Delicious Apple trees, a Gippsland grower writes:—

At winter pruning, leave the horizontal lateral growths untouched and remove any strong growing vertical growths. By growing on the horizontal laterals the sap is checked, thus assisting in fruit production; further, more sunlight gets to the buds. These **hints apply particularly to young trees six to ten years old.**

Once the Delicious can be brought into the fruiting stage the weight of the fruit tends to keep the laterals in a more horizontal position, and this is the ideal to be achieved.

The Yates is a spur-bearing variety. Experience has shown that the best Yates are produced on the laterals.

In pruning these laterals, cut to the second bud—from four to six inches from the parent lateral.

It will be noted that the first bud is at the junction of these two laterals. Remove this junction bud, allowing the second bud to develop. The reason is, that if cutting away the lateral, and thus removing the second bud, the fruit which develops from the junction bud is usually very small.

C. P. Nobelius, of Warragul, Victoria, writes:—

I have a rich flat with some 10 to 12-year-old Yates, which have grown very strongly; last year 27 trees averaged 11 kero. cases, some going fourteen kero. cases. To spur prune these would just be growing wood.

My method has been to leave the weakest laterals uncut, and to cut the strong ones out altogether; the ones left I do not cut the second year either: I leave them till they have fruited, then if they get too big, I cut them out and work on another weak one, which is sure to come out when you had cut the one out in the previous year.

The leaders I only cut lightly, and have let them go one year altogether, then head back into the next year. On the hill, trees of the same age are only half as big: these have to be pruned harder, according to growth.

I also find that no matter how light the crop, you must thin down to two Apples in each bunch.

Colombie Apple Export Competition.

J. A. Catto, of Rheola, the Winner: Ford Bros., Harcourt, Second, and Bacchus Marsh Packing Co. Third.

THE COLOMBIE Apple export competition for 1934 resulted in Mr. J. A. Catto, of Rheola, being first, and thus holding the Challenge Cup for 12 months. Points are awarded by Mr. J. M. Ward, Superintendent of Horticulture, who, with his officers, examined all the packs of Apples exported from Victoria to Europe this season. Mr. Catto secured the remarkably high average of 89 points, against the maximum possible of 95.

Messrs. Ford Bros., of Harcourt, who were this year placed second, were last year's winners, and it is interesting to record that, even though Messrs. Ford Bros. were only placed second this year, their pack showed even an improvement on last season, which shows how outstanding was Mr. Catto's pack.

The third place was awarded to the Bacchus Marsh Packing Co.

Successful Competitors.

Details of the points scored are as follow:—

	Max. Points.	Points Awarded. First. J. A. Catto, Rheola.	Second. Ford Bros., Harcourt.	Third. Bacchus Marsh Trading Co.
Labelling or Stencilling	10	10	10	10
Timber	10	9	9	9
Wiring	5	5	5	5
Wrappers (plain or printed)	5	5	5	5
Correct Height	5	5	5	5
Alignment	5	5	5	5
Compactness	5	5	5	5
Wrapping	10	9	9	9
Uniformity of Size	10	9	9	9
Quality and Freedom Disease	20	18	17	15
Uniformity of Color	10	9	8	6
Total Points Awarded		89	87	83

The following are very highly commended, and are to be congratulated on the excellent pack put up:—Harcourt Fruit Supply Society Ltd.; Somerville Packing Co.; Binnak Orchard, Somerville; T. E. Butler, Pakenham; Harcourt Fruitgrowers' Progress Association; Ray Bailey, Narre Warren; R. Webb, Narre Warren; J. W. Bailey, Narre Warren; Valley View Orchards, Pakenham; Parish Bros., Garfield; J. J. Ahern, Pakenham, and W. Black, Pakenham.

Social Golf Tournament.

Fruit Shippers and Shipping Companies.

A PLEASANT GOLF OUTING was enjoyed on June 1, when representatives of shipping companies in Melbourne, and those engaged in the fruit export business met in happy circumstances at the Peninsula Golf Club, at Frankston, Vic.

The original plan, as organised by Mr. H. G. Colombie, was for a teams' match between shippers and shipping companies, but owing to a last-minute change of plans, single handicaps were played.

The Peninsula Country Club is charmingly situated, and appreciation was expressed by all for the excellence in the arrangement of all the details of the outing.

Interviewed, Mr. Colombie stated that it had occurred to him for some time past that there was insufficient mixing of the various interests connected with the fruit export business, hence the arranging of this programme to remedy the defect.

Those present at the function included:—Mr. J. Brennan (chairman of the O.S.R.A., and manager Aberdeen and Commonwealth Line), Mr. C. R. Duncan (manager P. & O. Line), Mr. L. J. Morshead (manager Orient Co.), Mr. J. Graham and Mr. D. R. Anderson (Gibbs Bright & Co.), Mr. W. H. Swanton (Wm. Crosby & Co. Pty. Ltd.), Mr. A. C. Pynan (John Sanderson & Co.), Mr. P. Cordia (Wilh Wilhelmsen Line), Mr. G. E. Rees (McIlwraith McEacharn).

On the other side there were present—Mr. H. A. Mullett (Director of Agriculture), Mr. J. M. Ward (Superintendent of Horticulture), Messrs. E. Meeking, S. Aldous and W. H. G. Keys (Department of Agriculture), Mr. J. B. Mills (president Australian Apple and Pear Export Council), Mr. A. S. Harrison (vice-president of the V.F.M.A.), Mr. S. E. Scott, Mr. T. E. Butler, Mr. C. H. Tutton, Mr. C. H. Miller, Mr. G. E. Kitchin-Kerr (V.C.C.A.), Mr. J. Barker, Mr. F. Cave, Mr. C. Snider (I.F.M. Co.), Mr. H. E. Napier (New Zealand).

The winner was Mr. C. R. Duncan, with a very good gross score of 85, and net, score of 72. The second prize was won by Mr. C. H. Tutton, with a gross score of 95, and net. 77; the third going to Mr. H. E. Napier, with a gross score of 93, and net. score of 83. Mr. Cordia's performance was also rewarded, at the end of the list, for his persistent and long-sustained efforts, in record time, and without losing a ball.

The guests assembled at the golf house at about mid-day, when lunch

proceeded, and play began shortly after 1 o'clock. Mr. J. Brennan thanked the host, Mr. H. G. Colombie, for the splendid turnout, and for the opportunity afforded to mix in a social outing outside business. Mr. Colombie suitably responded.

Beautiful weather prevailed, and the links being in splendid condition, the outing was pronounced by all to have been a perfect success.

RED SCALE AT MILDURA.

Eleven Citrus Growers Fined.

Eleven Citrus growers were charged at the Mildura Court on May 30 for having failed to control Red Scale. In giving evidence, Mr. V. L. Lowry, an inspector of the Department of Agriculture, told the P.M. (Mr. D. T. Wilkins) that the Red Scale reduced the bearing capacity of the trees, and the marketing of the fruit became costly, if possible, and that unless the growers worked together the disease spread rapidly.

Fines were imposed on the following—O. H. Bennett, L. U. McMillan, £2, with £2/2/4 costs; F. B. Carey, Mrs. Fitzpatrick, Mrs. M. M. Moore, £3 with £2/2/4 costs; W. F. Flatteley, W. J. O'Brien, £2/10/-, with £2/2/4 costs; A. A. Sault, P. J. Smythe, £1/10/-, with £2/2/4 costs; F. Tyers, £1/9/-, with £2/3/4 costs; James Fulton, £1, with £2/2/4 costs. for having failed to destroy Red Scale in compliance with notices served on them.

"Black Leaf 40"

Death to Aphis (Plant Lice) and Other Insects

Aphis and other insects are common enemies of the orchardist and gardener. Protect your trees, vines and plants with "Black Leaf 40."

"Black Leaf 40" has the endorsement of Agricultural Colleges, Experiment stations and orchardists. It is the World's leading aphis specific. It also kills the young larvae of many chewing insects when sprayed upon them so as to wet their bodies.

In the Orchard and Garden

"Black Leaf 40" is recommended for killing wooly aphis, apple aphis, peach aphis, aphis on roses, other flowers and vegetables, mussel scale (young), Harlequin fruit bug, holy or cross bug, oleander scale (young), San Jose scale (young), red scale (young), red mites (Summer), rutherglen bug, pear and cherry slug, thrip, fine scale (young), pea mite.

In the Poultry Yard

Paint the roosts lightly with "Black Leaf 40" just before the birds go to roost. Body-lice will be destroyed while the flock roosts. To help prevent mites from attacking fowls, tie or tack a piece of heavy cloth around ends of roosts and roost supports and saturate with "Black Leaf 40;" spray inside of house with "Black Leaf 40," three tablespoonsful to a gallon of water to which soap has been added.

Kills By Contact and By Fumes

"Black Leaf 40" has a dual action. It kills plant insects both by fumes and by contact. This double-killing action makes "Black Leaf 40" unusually effective in insect control.

Paint Roosts . . . Kill Poultry Lice

Poultrymen find that if they paint the roosts lightly with "Black Leaf 40" the lice on the birds are killed. The heat from the birds' bodies releases fumes which destroy lice, as the flock roosts on perches.

Genuine "Black Leaf 40"

"Black Leaf 40" is registered by us in Australia and New Zealand as a Trade-Mark and Brand. Users are familiar with the red labelled packages and the black leaf design prominently displayed thereon. Beware of imitations. Insist upon genuine "Black Leaf 40," made only by Tobacco By-Products & Chemical Corporation.

Distributed in Australia by Neptune Oil Company, Melbourne, and by Producers' Cooperative Distributing Society, Sidney

MANUFACTURED BY
Tobacco By-Products & Chemical Corp.
(Incorporated)
LOUISVILLE, KENTUCKY, U.S.A.

THE . . . Market Grower

Vegetable Culture ∴ The Growing of Gherkins ∴ Items of Interest. ∴

Market Gardeners' and Fruitgrowers' Society

At the last Committee meeting of the Market Gardeners' and Fruitgrowers' Society there were present: Cr. C. C. A. George (Secretary), H. V. Barnett (President), E. A. Le Page (Vice-President), C. Baker and L. Lawrence (Mulgrave), C. James (Cheltenham), J. Hawkes (Mentone), G. Ryan (Wheelers Hill).

There was a good deal of business transacted among the most important being a notification from the Markets Committee, that in future horses would not be allowed to stop in their vehicles during the market hours, and must be removed to the horse lines which are provided by the City Council. It is felt by the Committee that these lines are not sufficient for working horses, as they are out in the open without any cover whatever, and often, when the horses reach the market they are quite hot, and to have to take a horse probably costing from £40 to £50 and tie him in the open, quite away from the vehicles, is forcing market gardeners to take risks with their animals. It is claimed by the Council that this measure is being taken from a standpoint of health, yet on the markets conducted by the same Council on the odd days, namely Monday, Wednesday and Friday, the horses are allowed to stop in the vehicles in the market.

The question of the price charged for excess water by the Metropolitan Board of Works was again discussed, and the question was asked as to why Parks and Gardens (not Market Gardens) get their water for 3d. per 1,000 gal., and yet market gardeners still have to pay 1/- per 1,000. It was decided not to let this matter rest until some relief was granted.

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Cabbages and Cauliflowers

Control of Black Rot.

BLACK ROT is at present causing some concern to growers of Cauliflowers and Cabbages in Sydney and adjoining areas. Mr. R. D. Wilson, assistant biologist of the Department of Agriculture, described recently the general features of the disease, and suggested methods of control.

Black rot might be introduced into a clean area by means of seed, or be carried over from year to year in the soil, on Cauliflower or Cabbage refuse. When the seed was severely infected, the trouble might make its appearance in the seed bed, causing wilting and death of the young plants. The disease on the seedlings could be identified by the presence of small, dark discolored areas. Wilting and yellowing of the leaves, blackening of the vein, followed by dwarfing or one-sided development, were also symptoms at this stage.

Insects, spattering rain, drainage water, and particles of dust transfer the germs from infected to healthy plants. Infected leaves became yellow and dropped off, and when cut the leaf stalk appeared blackened.

Steeping the Seeds.

Mr. Wilson advised that the seed be treated before sowing by steeping in hot water. Cauliflower seed was treated for 18 minutes and Cabbage seed for 25 minutes in water at a temperature of 122 degrees Fahr. The seed was tied loosely in cheese cloth bags and suspended in the water. The material was then spread out in a warm, shady place to dry out rapidly. If the seed was of low vitality dipping in a corrosive sublimate solution was recommended.

Other points emphasised were the use of clean areas for the seed bed, crop rotation, and the collection and burning of all diseased material as soon as observed. The control of sucking and biting insects should also reduce the spread of the disease.

"FRUIT WORLD APPRECIATED IN STH. AUSTRALIA.

Mr. L. J. Wicks, fruitgrower and nurseryman, of Highbury East, South Australia, writes, under date May 22:—

"I am glad to notice that you have started a new section in the "Fruit World," and sincerely hope it will be an unqualified success."

GIPPSLAND GROWER'S APPRECIATION.

Mr. A. R. Sands, Officer, Gippsland, Victoria, writes:—

"I wish to thank you for the 'Fruit World.' I find the paper very good reading."

The Value of New and Good Seed

Without doubt much time and money are lost through the planting of seeds which have been gathered before they were matured, or have become weak in germination through age. Some seeds become weak much sooner than others. Onion seed in particular, after the second year, is hardly worth the bother of planting, as 75 per cent. will not germinate, and what does come up will make a very weak plant. Parsnip seed also becomes very weak after the second year.

Carrot seed is not affected by age quite so much and may safely be planted into the third year. Lettuce also will stand three years. Beetroot seed is one that needs a good deal of watching for each seed shell should hold four kernels, but if it has not matured well will probably only hold one or two kernels; thus from a given quantity of good seed, probably twice as many plants will come up as from the same quantity of weak seed.

Cauliflower and Cabbage seed differ very largely from these other seeds, and

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may safely be sown for five years, in fact Cauliflower seed at three years old is considered to be in its prime. It is a good guide to watch the size of the packet which it takes to make a lb. If the packet is unduly large, you may be sure that the seed is not too good, and probably has a lot of husk, but not much kernel.

It is advisable to keep all seeds in a dry place, as the fact of moisture coming in contact with a packet of seed is likely to cause mildew in the seed.—H. V. Barnett.

Onion Growing.

ONE OF THE MOST SUCCESSFUL Onion growers in the Leongatha district, Victoria, applies a bag of fertiliser to the acre on new land; for the second crop he applies two bags, and for the third crop three bags to the acre. About equal quantities of super. or super. and bone and super. and sulphate of ammonia are used, the super. or super. and bone being top-dressed on the surface of the land before ploughing for the Onions—the super. and ammonia being worked into the soil as a top-dressing in the spring (November). It is estimated that these dressings increase the crop up to as much as two tons per acre, according to late spring and early summer rainfall, states the "Commonwealth Agriculturist."

In N.S.W. the Department of Agriculture have for several years carried out experiments on rich loams in the Wellington, Dubbo and Maitland districts. At the two former centres the rainfall can be supplemented by irrigation. In all three trials the variety used was Hunter River Brown Spanish—the standard Brown Onion of these districts.

At Dubbo, the seed was sown in beds during the first week in April, and transplanting took place at the beginning of July. Plants were placed at 6-inch intervals, in rows 10 inches apart.

At Wellington, the seed was sown in April, and transplanting took place in the middle of July, on a 6-inch square system.

At Maitland, the seed was sown direct in the fields in rows 11 inches apart, at the rate of 2½ lbs. of seed per acre.

The yields are summarised in the table below:—

From this it will be seen, says the District Agricultural Inspector, Mr. A. C. Orman, that the plots receiving the P.11 mixture yielded consistently well, while the others were irregular. Those plots receiving super. gave the top yield at Wellington, but the lowest at Dubbo, under very similar conditions. The M.22 mixture did not give results expected from it under the conditions prevailing during the season.

The mixed fertilisers comprised P.11 (six parts super. to one part of sulphate of ammonia), P.12 (six parts of super. to one part of sulphate of potash), M.22 (equal parts of super. and bonedust), and P.13 (six parts super., one part sulphate of ammonia, and one part sulphate of potash).

In previous years' experiments at Dubbo, when Onion prices were profitable, the department trials show that the best results were obtained from the application of 523 lbs. of a fertiliser mixture containing six parts of superphosphate and one part of sulphate of ammonia, the yield being at the rate of 9 tons 17 cwt. per acre. As the Onions were sold for £14 a ton, this plot showed an increased gross return over the unmanured plot (5 tons 7 cwt.) of £63.

Fertiliser.	Wellington. Tons	Cwt.	Dubbo. Tons	Cwt.	Maitland. Tons	Cwt.
448 lb. Superphosphate	20	13	9	18	9	4
552 lb. P.11 Mixture	20	4	13	8	11	15
560 lb. Basic Super.	20	1	10	12	9	12
No Manure	18	19	10	9	9	16
522 lb. P.12 Mixture	18	16	14	9	9	12
448 lb. M.22 Mixture	18	14	10	14	9	2
596 lb. P.13 Mixture	—		12	7	—	

The Vegetable Garden.

Snails, Slugs or Woodlice.—Use calcium arsenate baits to get rid of these troublesome pests. This is prepared as follows:—1 tablespoonful of calcium arsenate to 1 lb. of bran; add 2 tablespoonsful of sugar to this, and mix into a mash, not too wet, and distribute amongst plants.

Cherry Aphids.—These insects cluster on the young growth, turning same black. Spray in winter with lime sulphur to destroy eggs, and in summer with white oils, or tobacco sprays.

Cutworm Caterpillars.—To destroy these caterpillars, which attack Cabbage and Cauliflower plants, use poisoned baits. Spray plants with arsenate of lead.

Springtails. — These are small white insects which attack the roots of Beans and other plants. Treat soil with manurial insecticide or Tipulite.

Cabbage and Cauliflower Aphids.—Spray with nicotine sprays, Clensel or Katakilla to get rid of these green aphids.

Cabbage Moth. — Cabbages, Cauliflowers and Turnips are usually troubled with the greenish larvae of these moths. Spray with arsenate of lead, 1 in 25. Wash vegetables before using.

Harlequin Bug.—Use Clensel or similar sprays.

Broad Bean Aphids.—Use nicotine sprays for these black aphids, which cause a lot of damage by sucking the sap from the plants.

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THE GROWING OF GHERKINS

A Vegetable that is Gaining in Popularity

(A. C. Orman, H.D.A., Agricultural Instructor, N.S.W.)

THE GROWING OF GHERKINS (small Cucumbers) for pickling is a big industry in the U.S.A., but only recently has anything been done in N.S.W., writes Mr. A. C. Orman, H.D.A., in the N.S.W. Agricultural Gazette. The United States' recommendation is that no grower should plant a large area, as, owing to the continual harvesting, it is not possible to handle more than one or two acres per man. A succession of crops is necessary in order to spread the work evenly over the season. It is very essential that the pickle factories obtain the Cucumbers in the shortest possible time after picking.

Adversely Affected by Cold.

The Cucumber crop is susceptible to cold conditions, therefore, warm positions are desirable. It is not necessary to plant very early in the season, best results being obtained by holding back planting until the soil has warmed up in the spring. The crop requires a fertile soil, and, therefore, if the soil is poor, manure and fertilisers must be used. If well-rotted stable manure is available, apply it about two weeks before planting, and work it into the soil. The use of superphosphate (at the rate of about 3 cwt. per acre) is also recommended, while on acid soils lime should prove beneficial.

The "white spine" types are grown chiefly for the open market, but a "black spine" type is required for pickling purposes. The variety Boston Pickling is considered the most satisfactory, but it is doubtful if supplies can be obtained locally.

Cultural Details.

About 1 to 1¼ lb. seed will be required to sow an acre. Careful growers first soak the seed in a solution of one part corrosive sublimate to 1,000 parts of water for five minutes, then wash it in clean water and dry. The seed is planted in rows 6 to 7 feet apart, with "hills" 3 to 4 feet apart in rows. When the plants are sufficiently large, the "hills" are thinned to two strong plants. Single row planting is largely adopted, as it is said to facilitate harvesting. When placed in single rows, the plants, when thinned, are from 12 to 18 inches apart in the rows. Thinning is usually carried out when the plants have four to six leaves, the weakest plants being cut off just above ground level.

Cultivation should be shallow, as the crop is a shallow rooter. It is also advisable not to handle the plants or work amongst them when they are wet, as it is likely to spread disease. The vines are liable to wind injury, and a sheltered position is necessary.

Spraying with Bordeaux mixture (4-4-50 at regular intervals during the early stages is recommended. If there is foliage injury from this strength, it should be weakened to 2-4-50.

Yields and Returns.

Under favorable conditions, the plants should begin to bloom in a month to six weeks from time of planting, and should produce fruit of pickling size in about eight weeks from seeding. The fruit is picked when quite young, the best grade being one to three inches in length. It should be straight and cylindrical, and count not less than 850 to each 50 lb. The average yield in U.S.A. is about 50 bushels per acre, but good growers frequently obtain 100 to 150 bushels per acre (48 to 50 lb. per bushel).

Last year local prices were about £56 per ton. This figure was supplied by a suburban grower.

Cider Apples.

Arrival of Leading Varieties from England.

FOLLOWING THE DISCUSSIONS at the Research Committee of the Victorian Fruit Marketing Association, the Department of Agriculture has obtained scions of the leading English and French varieties of Cider Apples from the Long Ashton Research Station of the University of Bristol. The varieties are Kingston Black, Sweet Alford, Foxwhelp, Dabinett, Knott's Kernel, Royal Wilding, Balmer's Norman, and Medaille d'Or. The scions have been placed in cool storage, where they will remain until the spring, when they will be grafted on to trees at Burnley Gardens and Wahgunyah. It is hoped that next year some will be available for growers. Some of these varieties are growing in the Blackwood experimental orchard, South Australia. It is possible that experiments in Cider-making will be conducted at Burnley Gardens when the varieties are bearing.

SPRAYS THAT PAY.

"Sprays that Pay" is the title of a recent booklet issued by Messrs. Victor Leggo & Farmers Ltd., manufacturers, which should be of great interest to the orchardist. The various subjects dealt with include the following:—Spraying, analysis, general directions, some reasons for spraying failures, arsenate of lead, new improved spray spreader, prepared white oil, white oil emulsion, tree bands, ovicidal wash, copper sulphate, prepared spraying lime, litmus papers, Bordeaux mixtures, lime sulphur wash, nicotine sulphate, red oil, soft soap, calcium arsenate, benzole emulsion, dusting sulphur, wettable sulphur, atomised sulphur, "Arzeen" powder and liquid, wood preservative, spraying guide, spraying table, and removal of spray residues.

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Visitor from New Zealand

Interview with Mr. H. E. NAPIER

AN INTERESTING VISITOR to Melbourne during the past month has been Mr. H. E. Napier, who until recently took a very prominent part in the fruit industry of New Zealand.

In chatting with our Editor, Mr. Napier gave an outline of the efforts being made in New Zealand to improve the internal markets, on which we publish a separate report of a meeting held in Melbourne at which Mr. Napier spoke.

The question of fungicides and insecticides in New Zealand has been the subject of a very close investigation by Dr. Cunningham, who is at present in Australia representing the New Zealand Government at a conference of scientists in Canberra, at which will be discussed the vexed question of embargoes, because of disease.

There is probably no one in New Zealand who is as capable in this branch as Dr. Cunningham, whose book on Fungus Diseases of Fruit Trees is now a standard work throughout the world.

During the past three years a very close study has been made of spraying materials being offered for sale in New Zealand, the object of the investigation being to fix minimum formulae, under which no material may be offered for sale.

Among the many important matters brought to the notice of growers by Dr. Cunningham have been the necessity of using lime sulphur, at a strength judged by the polysulphide content, and not the baumé test — the influence of particle size in arsenate of lead in securing control for codlin moth and other chewing insects—the great value of colloidal sulphurs in securing better control of fungus diseases, and at the same time improving the foliage of the tree.

The work of Dr. Cunningham has meant an annual saving to the fruitgrowers of New Zealand of many thousands of pounds. If the fruit industry of the southern hemisphere is to compete in the world markets it is essential that costs be reduced wherever possible. Overseas costs, which are largely made up of freight, offer little possibility of reduction, therefore, it is in the orchard that the problem must be tackled. Dr. Cunningham has proved that by improved spraying practice, at less cost, a greater proportion of high-quality fruit will be available. It is this fruit which will show the producer a profit on the overseas market in these days of intensive competition.

Mr. Napier enlarged on some of the points disclosed by Dr. Cunningham's investigations, and pointed out that on the New Zealand market lime sulphur had been sold with a 11 per cent. polysulphide content at the same price as another brand containing 18 per cent. polysulphides, which could be used at almost half the strength to secure the same results. To-day these materials were

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valued on their polysulphide content, and growers bought accordingly.

Some brands of arsenate of lead had been found to contain a heavy percentage of particles, which were too large for the grub in its young stages to absorb. The analysis of the lead was perfectly good, but what value is there in an analysis if the poison cannot be taken in by the grub? Only three of the 20 odd brands of lead on the New Zealand market were proved to be up to A standard as regards particle size.

As a result of commercial tests spaced over four years, colloidal sulphur has proved to be such an effective control of fungus diseases (Mildew, Brown Rot, Black Spot, Rust, etc.), that, as far as New Zealand is concerned, it has almost entirely displaced ground, sublimed, atomised and precipitated sulphurs as a summer spray. The most effective results are being secured with colloidal 2-100, combined with lime sulphur 1-150 to 1-200. Black Spot control has been secured under commercial conditions of less than 1 per cent. infection, as against check trees showing 70 per cent.

The improvement in foliage by the use of the soft colloidal sulphur gives a greater protection against sun-scald and russeting.

The talk we have had with Mr. Napier emphasises the necessity of closer collaboration between the two countries in respect to practical research work, which will help towards securing greater efficiency and less cost to the grower. As Mr. Napier admitted, it is possible, in fact, probable, that Australia can help New Zealand in other directions. Such mutual assistance will be in the interests of everyone in the industry.

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Fruit imported canned Pineapples. Peaches and Apricots are liked by the public. British canners anticipate producing 100,000,000 tins of fruit this season (states the "London Daily Herald"). They are masters in the canned vegetable market, but find that the people prefer cheaper imported Pineapples, Peaches and Apricots.

Britain's Apple Imports

INCREASED EMPIRE SUPPLIES

(By Percy H. Thomas, Chief Horticulturist, Tasmanian Dept. of Agriculture.)

IT IS INTERESTING at the present day to compare the position in regard to Great Britain's Apple imports under free trade and preferential tariffs. Whilst the total imports have not materially altered the proportion supplied by Empire producing countries has nearly doubled, and Canada now occupies the position formerly held by the U.S.A.

1931.
Free Trade.
Total—7,599,000 cwt.
Foreign.
Total—4,446,000 cwt.
U.S.A.—3,534,000 cwt.
Empire.
Total—3,153,000 cwt.
Canada—1,769,000 cwt.
Australia—1,033,000 cwt.
N.Z.—337,000 cwt.
Empire percentage—48.

1933.
Tariffs and Preference.
Total—7,461,000 cwt.
Foreign.
Total—1,639,000 cwt.
U.S.A.—1,371,000 cwt.
Empire.
Total—5,822,000 cwt.
Canada—3,376,000 cwt.
Australia—1,970,000 cwt.
N.Z.—446,000 cwt.
Empire percentage—78.

From the reports published it is evident that important developments are taking place in the British fruitgrowing industry; planting is being extended and growers are organising to obtain the full benefits of the home market, which is considered to be primarily the preserve of the home grower while the supply lasts.

After the experiences of last season when a large quantity of imported Empire Apples came into competition with British-grown fruit, opinion appears to be crystallising that the adoption of some control of Apple imports is necessary in the form of a "close season period" as advocated some years ago, whereby certain defined periods of the year are allocated to the different exporting countries.

The British fruitgrowers have also adopted the

"National Mark" scheme

for selling their fruit. (This is similar to the "Seal of Quality" suggested for Tasmania some years ago), and an endeavor is being made to capture a larger portion of the home market by advertising and propaganda designed to show the advantages of purchasing graded supplies of selected home produce to the consumer.

The opinion is also expressed that Great Britain cannot continue to be the dumping ground of low-grade fruit which competes with their own producers, especially when such is affected by diseases or pests which are likely to be introduced into the country to the detriment of home orchards.

These reports and figures will be of interest to the Tasmanian Apple grower, who is largely dependent on the markets of Great Britain for the selling of his produce, in showing the altered position that to-day exists, and the general trend of thought in Great Britain toward the question of imported Apples.

Trade With Glasgow.—The Victorian Department of Agriculture recently made available a report from the Agent-General (Mr. R. Linton), dealing with his visit to Glasgow. Fruit merchants there stated they did not want unknown varieties, and preferred Jonathans, Delicious, Granny Smith and Cleos, sizes 2¾ to 3 in. Australian Oranges were especially asked for.

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CITY FRUIT MARKETS, SYDNEY

Trade with New Zealand.

The following decisions re plant quarantine were reached at a conference at Canberra during June, between Dr. Cunningham, from New Zealand, and representatives of the Commonwealth.

Systems of controlled exportation of products, with full reliance on the field control and inspection services in the Dominions, should replace the embargo system as soon as possible.

Apples from New Zealand must be certified by the Department of Agriculture in New Zealand as having been derived from uninfected orchards. Also, that no practical risk is involved by importation.

That trade in potatoes may be safely resumed, as the knowledge now available as to powdery scab is sufficient to justify the withdrawal of the prohibition on importations.

It was agreed that New Zealand could import Citrus from Australia subject to the certification by the Departments of Agriculture in the various States, without the risk of introduction of Fruit Fly.

The decisions, which were based on scientific evidence only, will be submitted to the Governments of New Zealand and the Commonwealth.

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"Fruit World Annual"
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"The Fruit World," Box 1944 G.P.O., Melbourne.

Fruit Marketing in Melbourne

Plans for Improvement.

A meeting of those interested in the fruit industry was held at the Commercial Travellers' Association, Melbourne, on Friday, June 8, 1934. Those present included Messrs. W. A. Thiele, G. C. Karnaghan, F. G. Beet, W. P. Mair, V. Borley, J. W. Aspinall, F. Cave, C. J. Parnham, E. W. Thompson (Retail Fruiterers' Association), J. G. Aird, — Winne, A. G. Whitlam (University), G. Fankhauser, J. M. Jacobs, F. R. Mellor, H. G. Colombie, S. Scott, A. S. Harrison, J. Barker, W. A. Webb, W. McGowan, H. M. Wade, R. M. Finlay, G. McDonald, — Black, J. J. Tully, R. E. Boardman, and others.

Mr. F. Cave called the meeting to order, and stated that at a combined meeting, held on February 9th, it had been decided to call a meeting of growers and distributors to consider plans re the local marketing of fruit. This meeting had been called accordingly, and particularly to hear Mr. H. E. Napier, who was to describe the methods adopted in New Zealand for standardising and advertising fruit.

Nominations for chairman were called for. Mr. F. Cave was elected unanimously. The chairman expressed appreciation to Mr. H. E. Napier for his attendance, and called on him for his address.

Mr. Napier gave details of the campaign in New Zealand for standardisation and advertising fruit, displaying colored posters showing the Dominion Mark Scheme. Various questions were asked and answered.

It was decided, on the motion of Messrs. Colombie and Harrison—

"That this meeting favors the inauguration of plans to improve the local marketing of fruit, and that a provisional committee be appointed to give further consideration to this matter, the committee to consist of the following—Messrs. F. G. Beet, V. Borley, R. M. Finlay, W. P. Mair, F. Cave, W. McGowan, H. M. Wade and E. W. Thompson, with power to add."

It was decided to hold a committee meeting on June 25 to go into further details.

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New South Wales

LOW GRADE FRUIT ON SYDNEY MARKETS.

At the annual conference of the Irrigation Areas' branch of the N.S.W. Fruitgrowers' Federation there was an animated discussion regarding low-grade fruit on the Sydney market.

Mr. Connor moved that the Department of Agriculture be requested to enforce grading and packing regulations to eliminate low-grade fruit.

Mr. Inman stated that the defining of the low-grade fruit was a difficult matter. Small fruit was not necessarily low grade. He thought the poor stuff came from small orchards close to the city. Low grade was the fruit not fit for human consumption.

The General Secretary of the Federation, Mr. E. E. Herrod, stated that inspectors only functioned under the Plant Diseases Act. Fruit unfit for consumption could be condemned, but the fruit which clogged the market was that which should never have left the orchard: but if it did not offend any legislation no inspector could stop it. There was a lot of fruit from Tasmania marked "plain grade" which did not come up to "plain grade" regulations.

The view was expressed that departmental inspectors took a lenient view of certain fruits offered for sale. The motion was carried.

SYDNEY MARKET.

THE PAST MONTH has again been a particularly dull one, the demand for all varieties of fruit being below normal for this period of the year. The reduced spending power of the public combined with the cold weather and the high prices ruling in the latter part of the month for green vegetables being probably the chief reasons for the falling off in enquiry.

Despite the low prices ruling for Citrus fruit, agents found great difficulty in clearing stocks and inferior lines of **Oranges** and **Lemons**, and small sizes of **Mandarins** could only be sold at sacrifice rates.

Pears were only in light supply, but owing to the reduced demand values did not improve on the figures for the previous month.

Supplies of **Apples** were ample in quantity, but choice lines were scarce and sold at fair values. Too much inferior fruit was available, while the percentage of small sizes was also above the average.

Choice quality local Del. were in light supply, and sold well, and this also applied to Granny Smiths.

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Passion Fruit fell off in supply as the month advanced and prices moved up sharply.

Pineapples, on the other hand, once more were plentiful, and values came back considerably.

Bananas were in lighter supply early in the month, and prices moved up. With heavier consignments and poorer demand values again fell, and at the time of writing are lower than for some weeks.

With increased consignments of **Grapefruit** values are not high, and inferior lines can only be sold at low rates. Growers would be well advised to cure their Grapefruit, so that the marketing period can be extended.

General. It has been noticeable in the past that the demand for fruit always falls off in the months of June and July owing to the cold weather. This can be expected to continue until something is done to stimulate consumption.

Export of Oranges. Two shipments of Oranges were despatched to the U.K. during the month. The "Ascanius," which sailed on the 5th, took 2,800 cases. The quantity booked for this steamer was 5,000 cases, but unfortunately 2,000 cases were destroyed by fire when the Gosford Packing House was burnt down.

The "Idomeneus," which sailed on the 16th, loaded 7,500 cases at Sydney.

Bookings for July total about 30,000 cases, and for August about 40,000 cases.

—P. S. Macdermott.

Sydney, 28/5/34.

Sydney.—The Market Representative of the Fruitgrowers' Federation of New South Wales reports under date June 25 as follows.—**Apples:** Crofton, 4/- to 8/-; Cleo., 2/- to 7/-; Del., 6/- to 13/-; Fr. Crab, 2/- to 6/-; Geeveston Fanny, 3/- to 6/-; G. Smith, 6/- to 10/-, few 13/-; Jon., 3/- to 8/-, few 10-; L. Pippin, 2/- to 5/-; R. Beauty, 4/- to 9/-; Scarlet Permain, 2/- to 5/-, few 6/-; Sturmer, 2/- to 4/6; Tasman's Pride, 2/- to 5/-; Winesap, 4/- to 8/-, plain grades lower. **Pears:** Jos., 6/- to 10/-; Packham's T., 6/- to 10/-; W. Cole, 7/- to 11/-; W. Nelis, 6/- to 10/-; plain grades lower.

Bananas: N.S.W. and Q'land., 9/- to 16/- trop. case, few higher; Fiji, 10/- to 18/-. Deliveries are slightly heavier than at this time last year, and the market at present is lower than for some weeks. A Norfolk Is. shipment of 600 cases is expected to-day. **Cust. Apples,** Q'ld., 3/- to 4/- ½-bush. **Citrus**—Grapefruit: N.S.W. local and inland, 4/- to 6/-; small, 1/- to 3/-; large special, 7/- to 9/-. Lemons: N.S.W. local, 3/- to 5/-; inland, 4/- to 5/6. Navels, N.S.W. (special and standard), 2/6 to 5/6; Common Oranges, 2/- to 3/- bush. Mandarins: Emperor, 2/- to 5/- bush.; Thorny, 2/- to 3/6 half bushel.

Passion-fruit, 5/- to 12/-; Papaws, 8/- to 12/- trop. case (few special higher). Pineapples, Q'ld. Queen, 5/- to 8/- trop. case; Tomatoes, N.S.W., inland, 3/- to 5/- half., spec. colored to 6/-; Mangrove Mt., 3/- to 5/-, repacked, 5/- to 8/-; Q'ld. Bowen, 4/- to 6/-. Queensland fruit is now experiencing the best demand, some very choice quality fruit arriving.

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VICTORIA.

Melbourne (29/6/34/). — The Melbourne market manager of the Federal Citrus Council of Australia reports sales as follow:—Navel Oranges, average standards, including N.S.W. 75-84 4/-, 96-112 4/6, 126-182 5/-, a few 5/6; selected standards, 5/6 to 7/6; specially selected wrapped standards, 6/6 to 8/6, few higher. Grapefruit, best counts, 7/- to 8/-, few 9/-. Lemons, good standards, counts 180-225 6/-, few 7/-, small from 3/-. Mandarins, N.S.W. Emperors, best counts, 160-192 6/-, few 7/-, 258-274 5/-, 300 up, 4/-; selected, full-colored lines to 7/-, best counts, a few 8/-.

The following prices are supplied by the Wholesale Fruit Merchants' Association of Victoria:—Apples—Eating, 3/- to 6/- case; cooking, 2/6 to 5/-, some selected varieties higher; Bananas (double case), green, 8's, 9's, 12/- to 14/-; 7's, 10/- to 11/-; 6's, 8/- to 9/-; few special lines higher; faulty lines lower; Celery, Adelaide, 6/- to 7/- case; few selected lines, 8/- to 9/-; inferior lower; Custard Apples, 3/- to 5/- half-case; Grapefruit, 5/- to 8/- case; Grapes, 4/- to 8/- case; specials, 1/- to 2/- higher; Lemons, 3/- to 6/- case; few specials to 7/-; Mandarins, N.S.W., 4/- to 6/- case; Vic. and Q'land, 8/- to 10/-; Oranges, Navels, average standard, 4/- to 6/- case; inferior lower; selected standards, 7/- to 9/-; Passion-fruit, 10/- to 20/-; special lines higher; Pines, 7/- to 8/- double case; few best counts, 9/-; green lines lower; Pears, 4/- to 7/- case; some special varieties higher; Papaws, 10/- to 12/- double case, well colored to 14/-; green lower; Tomatoes, hothouse, to 15/- half-case.

BRISBANE FRUIT MARKETS.

Unsuitable Apple Varieties Arriving.

Writing early in June, Messrs. Hedley Geeves Pty. Ltd., Growers' Agents, Brisbane, stated that up till then there had been a glut since the end of March, the reasons being various. In the first place, the Stanthorpe Apples were badly affected with Fruit Fly, which had the effect of putting consumers off Apples, and when fresh consignments came forward from Tasmania and Victoria, we found difficulty in making sales at prices equal to those of previous years. Another thing was the poor quality of the Apples which came forward, from Victoria in particular. A lot of the fruit which came to Brisbane had evidently been discarded from overseas shipments, or had been on the ground, and this tended to keep the public off Apples also.

Another factor was that a number of varieties which were debarred from the English market, found their way to Brisbane, particularly London Pippins, Reinettes du Canada, Alexanders, Ribstones and Spitzenbergs, and which are not popular on our market.

Values during April and May were mainly from 4/- to 6/-, with Jonathans generally at 7/- to 8/-, the Jonathan being the most popular Apple on our market.

We trust that growers will not send varieties which are not popular on this market, and thus save the cost of the case, the freight, and the marketing, which in many instances are not met out of the price realised for the fruit.

The Citrus season opened at the end of April, and the Queensland Navels have been on the

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market ever since. The quality is quite good, but the fruit has lost a lot of its natural flavor, owing to the heavy rains experienced during the growing period, and also the excessive moisture is preventing the fruit from keeping, mould setting in two or three days after arrival on the market.

The N.S.W. coastal districts are sending on Navels, and these are being sold at round about 4/- per case, an abnormally low price for Oranges at this time of the year. The Queensland Navels are selling mainly at 4/- to 6/-. Consignments have commenced to arrive from the N.S.W. irrigation areas, and, as this fruit appears to keep better than the coastal, it looks as though it will have preference in sales.

Brisbane (19/6/34). — Messrs. Robsons Ltd., Turbot-street, Brisbane, report as follow:—

At the time of writing there is every indication of an improvement in the Apple market here. Prices realised for the past two direct shipments from Tasmania have not been as satisfactory as desired, but the fruit that arrived ex the "Ngatoro" to-day met with a stronger demand, choice Jons. realising to 9/-, Green Crabs to 8/-, this also applying to Cleos. The figure for Scarlets and Sturmers is in the vicinity of 7/6, Sturmers now being the most suitable Apple for the long distance country trade.

Pear sales are still being maintained at firm rates, Winter Coles selling freely at 13/-.

Local citrus is now well represented on the market, Navels selling to 7/-, Common Oranges to 5/- and Mandarins to 6/-.

All vegetables are now selling freely, and we anticipate that firm rates for all varieties will be maintained for some time to come. Cabbage selling to 10/- per dozen, cauliflowers to 15/-, and beans and peas to 11/- per 30 lb. bags.

Brisbane (25/6/34). — Pineapples, smoothleaf, cases 2/6 to 4/6, roughleaf, 2/6 to 4/-; Lemons, 3/- to 6/- case; Southern, 4/- to 7/-; Gayndah, 4/- to 7/-; Oranges, 2/- to 3/6, a few at 4/-; Navels, 3/6 to 5/-, special to 6/-; Mandarins, local, Glens., 3/- to 6/-, a few at 7/-; Emperor, 2/- to 4/-, large 5/-; Scarlet, 2/- to 5/-, a few higher; Grapefruit, 3/- to 6/-; Passion-fruit, 3/- to 7/-; Custard Apples, 2/- to 2/6; Papaws, 1/6 to 3/- bush. case, a few special to 4/-; Yarwun, 4/- to 5/- bush., 8/- to 9/- one and a half. bush. case. Imported Fruit.— Apples: Jon., 6/- to 9/-; S.P.M., 5/- to 7/6; A.R.O., 5/- to 6/-; F.C., 5/- to 7/6; RB., 6/- to 8/-; N.Y.P. and G.F., 5/- to 8/-. Pears: W.C., 9/- to 12/-; Jos., 10/- to 12/-; W. N., 9/- to 12/-; Kieff., 5/- to 7/-; B.B., 7/- to 10/-; Howell, 8/- to 11/-. Tomatoes: Colored, 3/- to 7/-, a few special to 7/6; green, 2/- to 4/-, few special, 5/-; Bowen, 4/- to 6/6.

SOUTH AUSTRALIA.

Adelaide (22/6/34).—Apples (eating), 4/6 to 5/6 case; cooking, 3/6 to 4/- case; Bananas (Fiji), 20/- to 22/- crate; Grapes (dark), 8/- case; Grapes (white), 8/-; Lemons, 4/-; Oranges (Common), 4/- to 5/- case; Oranges (blood), 5/-; Oranges (Mandarin), 9/- to 10/-; Oranges (Navel), 6/- to 8/-; Oranges (poorman), 4/-; Passion-fruit, 16/- case; Pears (eating), 7/- case; Pears (cooking), 4/-; Pineapples, 13/- to 14/- case; Quinces, 4/6 case.

WEST AUSTRALIA.

Perth (22/6/34)—Apples: Jon. dumps, plain and small, 3/- to 4/6; standard, 5/- to 7/-; Dunn's, 2/- to 3/-, 3/6 to 5/-; prime, 5/- to 6/-; Yates, 2/6 to 3/6, 4/- to 6/-, 6/- to 7/- (special to 8/9); G. Smith, 2/6 to 4/-, 4/6 to 6/6, 7/- to 9/-; Cleo., 2/- to 3/-, 4/- to 5/-, 5/- to 6/- (special to 7/-); Doherty, 3/- to 4/-, 4/- to 5/6; R. Beauty, standard, 4/- to 5/-, 5/- to 6/-; Rokewood, plain and small, 2/- to 3/-, 3/6 to 5/-; Del., 4/- to 7/-, 8/- to 8/6. Citrus: Navels, flats, 2/- to 4/- (special to 4/9, inferior from 1/6); dumps, 3/- to 4/6 (prime to 5/6, inferior from 2/-); Lemons, 1/- to 3/- (special to 3/6); Mandarins, 4/6 to 7/- (special to 8/6, others from 3/6); Tomatoes, 6/- to 11/- (prime to 12/6, inferior from 1/6).

NEW ZEALAND.

Dunedin (15/6/34).—Messrs. Reilly's Central Produce Mart Ltd. report as follows.—

Prices (half-cases): Passions, N.Z., 13/-; Dessert Pears, 2/-, 3/-; N.Z. Lemons, 8/-; Persimmons, 6/-; Tree Tomatoes, 6/-. Bushel and American Cases.—Apples: Coxs, 9/-, 10/-; Jons., 4/-, 6/-; Cleos., 6/-, 7/-; cookers, 3/6, 5/6; Del., 5/-, 7/-. Pears (cooking), 4/-; W. Coles, Nelis, 4/-, 6/-. Cal. Oranges, 45/-; Cal. Grapefruit, 40/-; Cal. Lemons, 55/-; N.Z. Lemons, 14/-, 16/-; Bananas, specs., 17/6 Green Samoans, 18/6; Niues, 16/-; Poorman Oranges, 13/-, 13/6.

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